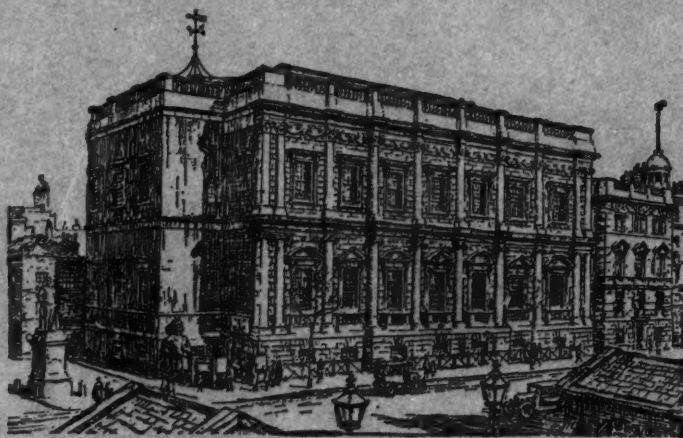


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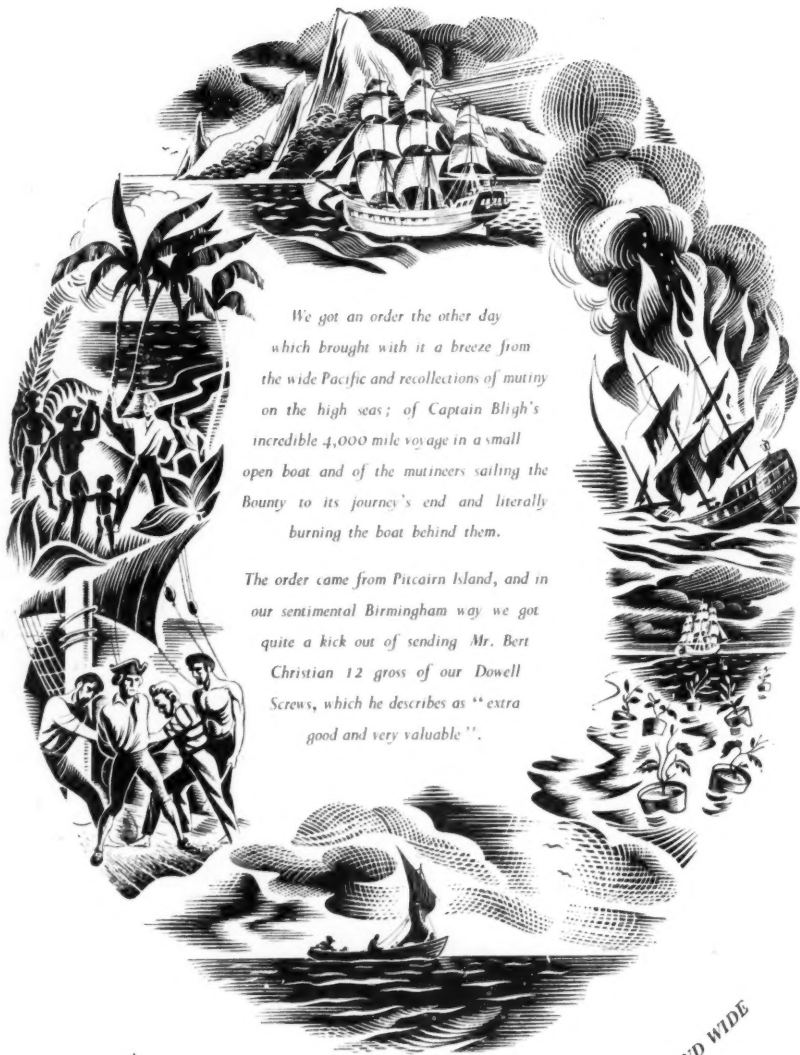
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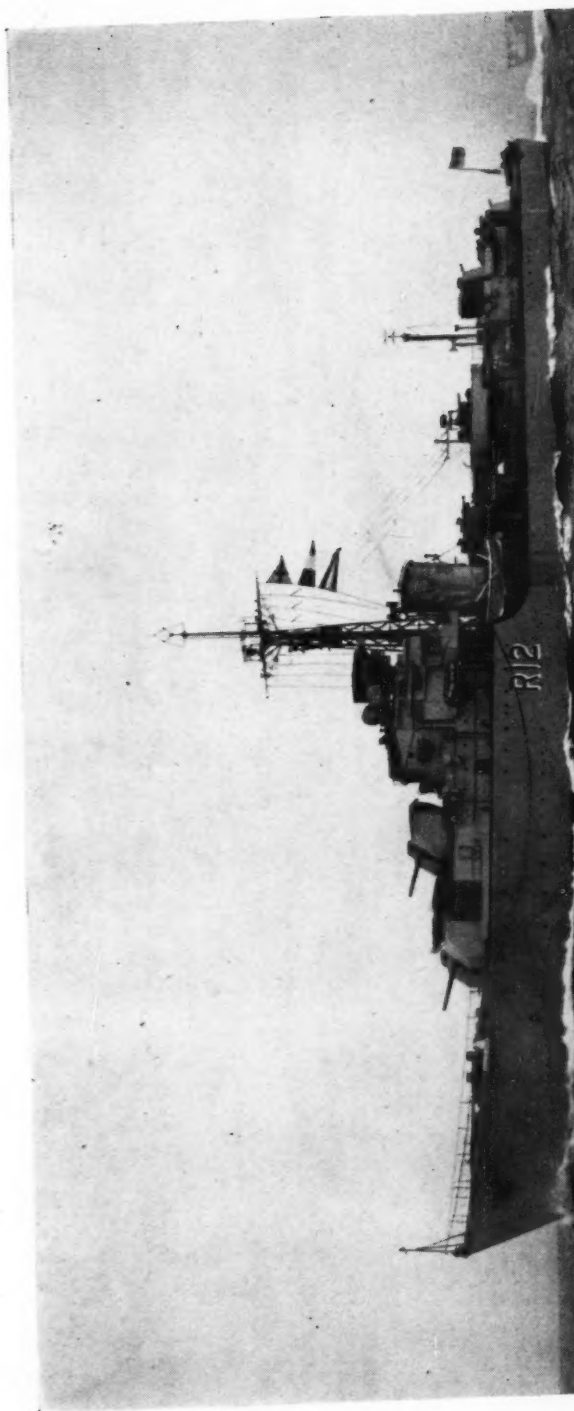


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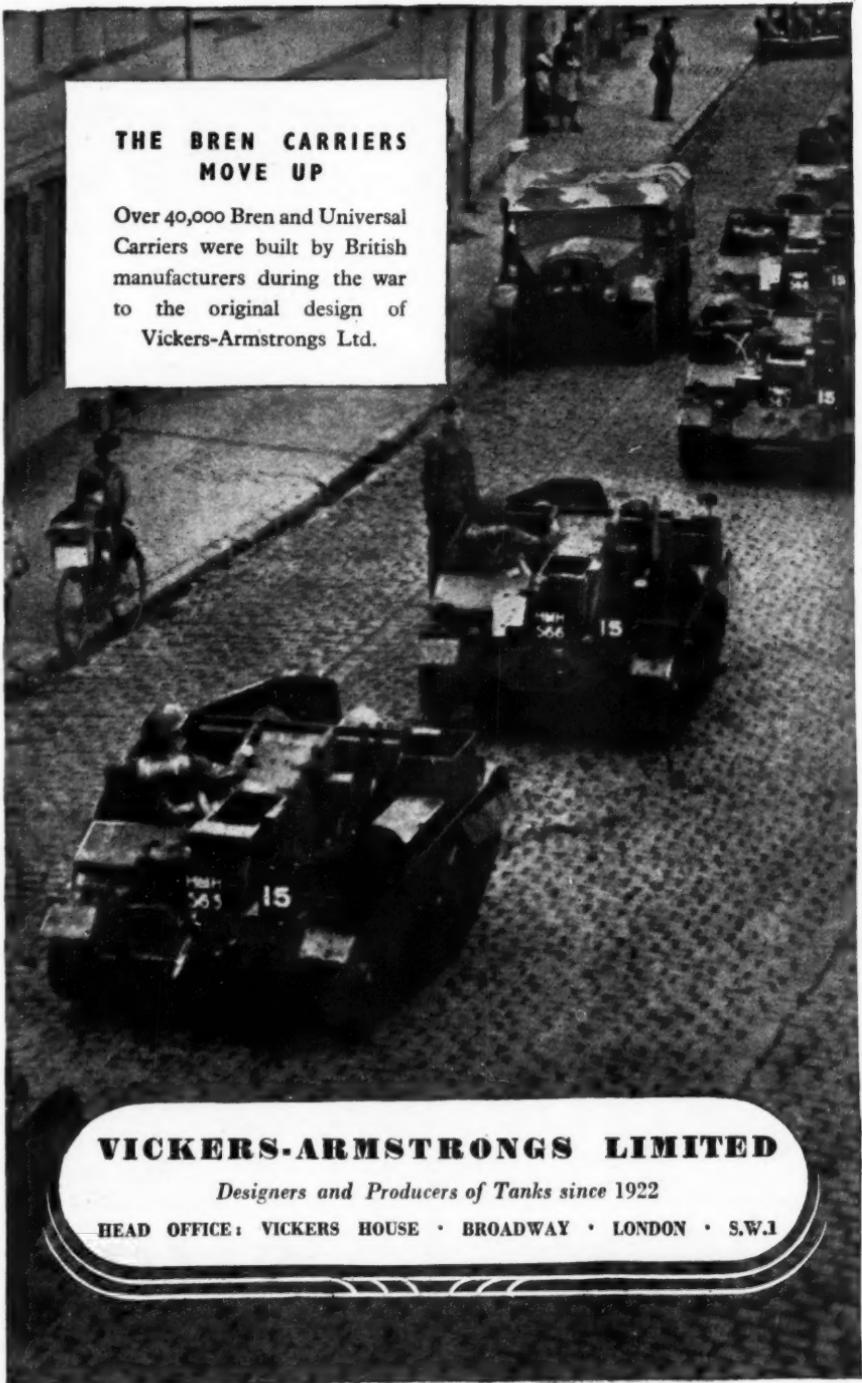
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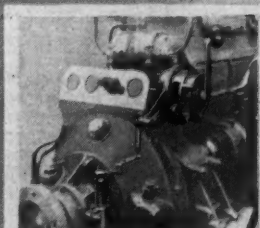
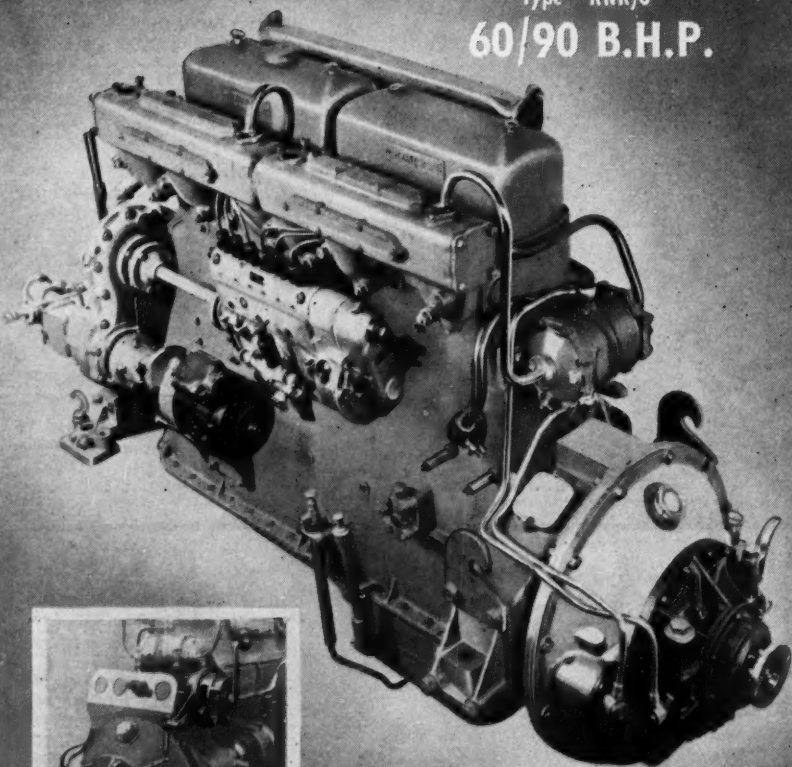
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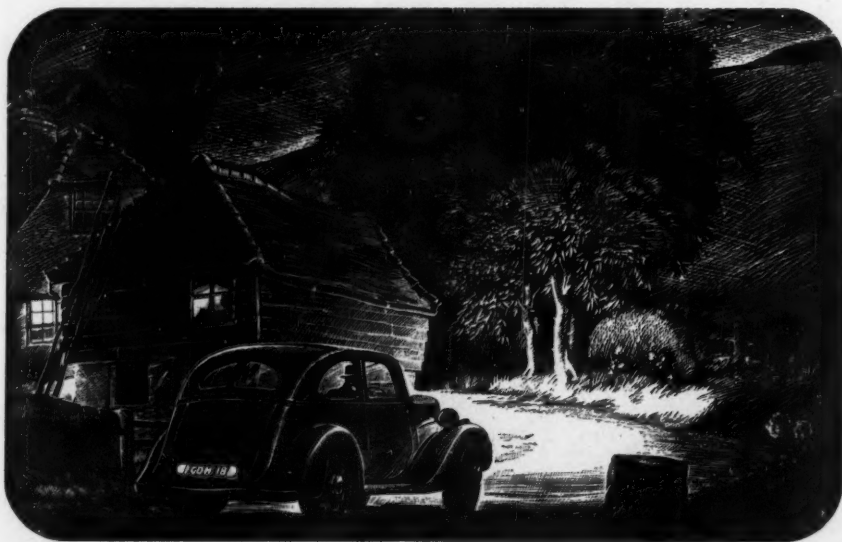


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ARMY

Lieut.-Colonel D. P. St.C. Roissier, O.B.E., The Royal Lincolnshire Regiment.
Major D. C. Crocker, Royal Artillery.
Captain B. D. H. Clark, M.C., The Royal Irish Fusiliers.
Major P. H. V. de Clermont, 8th (K.R.I.) Hussars.
Captain P. B. Cavendish, 3rd The King's Own Hussars.
Major M. Widdup, New Zealand Artillery.
Captain A. A. Greenwood, The Royal Lincolnshire Regiment.
Major E. R. S. Westropp, The Royal Hampshire Regiment.
Major K. A. Heard, M.C., The King's Shropshire Light Infantry.
Captain D. M. Berry, M.B.E., late Royal Artillery.
Captain I. T. C. Wilson, M.C., Royal Engineers.
Captain C. G. Wylie, 1st Gurkha Rifles.
Major P. V. Smillie, R.E.M.E.
Captain H. F. Hamilton-Dalrymple, Grenadier Guards.
Captain G. M. Audland, Royal Artillery.
Lieut.-Colonel J. C. de F. Sleeman, O.B.E., Royal Tank Regiment.
Captain R. P. F. Warner, Royal Artillery.
Lieut.-Colonel R. T. Warner, R.I.A.S.C.
Captain E. J. T. Jeremy, Royal Artillery.
Captain F. J. Reed, The East Surrey Regiment.
Lieutenant B. D. Markwell, The Gloucestershire Regiment.

MEMBERSHIP

Full particulars of Membership with alternative forms for Bankers' Orders, and for Deeds of Covenant enabling the Institution to recover Income Tax, can be obtained on application to "The Secretary, Royal United Service Institution, Whitehall, London, S.W.1."

Commissioned Officers of *all* H.M. fighting Services, including those of the Dominions and Colonies, and Midshipmen and equivalent ranks of the Royal Navy, Dominion Navies, Royal Naval Reserve and Royal Naval Volunteer Reserve, are eligible for membership without proposal or ballot.

Naval, Military and Air Force Cadets are eligible on the recommendation of their Commanding Officers.

Ladies whose names appear or have appeared in the Official Lists as serving or having served as officers with any of the three Services are eligible.

An Officers' Mess may subscribe to the JOURNAL, but is *not* eligible for membership.

TERMS OF SUBSCRIPTION

New rates of subscription will come into force on 1st January, 1948. For details see Secretary's Notes.

The subscription entitles Members to the loan of four volumes at a time from the Library, provided they are at Home or at those stations abroad where arrangements exist for forwarding books.

It is important that Officers joining should furnish full and clear particulars of their Name, Rank, Ship, Regiment or R.A.F. Squadron, etc., and the address to which they wish their JOURNALS sent.

Officers of the Dominion and Colonial Naval, Military and Air Forces temporarily in the United Kingdom may become members for a period of six months on payment of Ten Shillings and Sixpence, or One Guinea for twelve months. The additional subscription to the Lending Library is Five Shillings for six months.

THE INSTITUTION

The entrance to the Royal United Service Institution is opposite the Haig statue in Whitehall. It has the best professional Library in the United Kingdom. The Reading and Smoking Rooms are provided with the leading papers, periodicals and writing materials.

The Institution is open daily from 10 a.m. to 7 p.m., except Sunday, Christmas Day and Good Friday.

THE JOURNAL

The R.U.S.I. JOURNAL is published in February, May, August and November of each year, and sent post free to Members in any part of the world. Copies may be purchased by non-members, price 7s. 6d. Annual subscription £1 10s., post free. Orders should be sent to "The Secretary, Royal United Service Institution."

THE MUSEUM

The R.U.S. Museum is open free to the Allied forces in uniform. Members may obtain passes for their friends on application to the Secretary.

SECRETARY'S NOTES

NEW MEMBERS

The following officers joined the Institution during the period 1st August to 31st October, 1947:—

ROYAL NAVY

Lieutenant-Commander T. N. Masterman, O.B.E., R.N.
Lieutenant R. de Pass, R.N.
Lieutenant A. H. L. Harvey, D.S.C., R.N.
Sub-Lieutenant W. E. C. Perkins, R.N.
Lieutenant-Commander G. F. Walker, R.N.V.R.
Surgeon Lieutenant-Commander C. G. Hunter, D.S.C., M.B., B.S., R.N.
Lieutenant-Commander (S) J. V. A. Musters, R.N.
Captain John Terry, C.B.E., M.V.O., R.N.
Lieutenant-Commander C. H. C. Adams, R.N.
Lieutenant A. W. Toase, Royal Marines.
Lieutenant (S) G. C. David, R.N.
Commodore E. W. Longley-Cook, C.B.E., D.S.O., R.N.
Captain P. H. Gwyn-Williams, Royal Marines.
Mr. A. A. Browne, Midshipman, R.N.
Captain Eric W. Bush, D.S.O., D.S.C., R.N.
Lieutenant-Commander J. F. Bayliss, R.N.
Lieutenant John Gunn, Royal Australian Navy.
Commander A. H. Williams, D.S.C., R.N.
Mr. A. M. C. Macklow-Smith, Midshipman, R.N.
Commander R. A. Villiers, R.N.
Commander C. B. Sanders, V.D., R.N.V.R.
Captain E. T. G. Shulldham, Royal Marines.
Lieut.-Colonel N. H. Tailleur, D.S.O., Royal Marines.
Captain E. F. Scott, Royal Marines.

ARMY

Lieut.-Colonel D. P. St.C. Roissier, O.B.E., The Royal Lincolnshire Regiment.
Major D. C. Crocker, Royal Artillery.
Captain B. D. H. Clark, M.C., The Royal Irish Fusiliers.
Major P. H. V. de Clermont, 8th (K.R.I.) Hussars.
Captain P. B. Cavendish, 3rd The King's Own Hussars.
Major M. Widdup, New Zealand Artillery.
Captain A. A. Greenwood, The Royal Lincolnshire Regiment.
Major E. R. S. Westropp, The Royal Hampshire Regiment.
Major K. A. Heard, M.C., The King's Shropshire Light Infantry.
Captain D. M. Berry, M.B.E., late Royal Artillery.
Captain I. T. C. Wilson, M.C., Royal Engineers.
Captain C. G. Wylie, 1st Gurkha Rifles.
Major P. V. Smillie, R.E.M.E.
Captain H. F. Hamilton-Dalrymple, Grenadier Guards.
Captain G. M. Audland, Royal Artillery.
Lieut.-Colonel J. C. de F. Sleeman, O.B.E., Royal Tank Regiment.
Captain R. P. F. Warner, Royal Artillery.
Lieut.-Colonel R. T. Warner, R.I.A.S.C.
Captain E. J. T. Jeremy, Royal Artillery.
Captain F. J. Reed, The East Surrey Regiment.
Lieutenant B. D. Markwell, The Gloucestershire Regiment.

Lieut.-Colonel G. W. H. Peters, D.S.O., M.C., The Bedfordshire and Hertfordshire Regiment.
Lieut.-Colonel W. S. Ritchie, O.B.E., The Royal Scots Fusiliers.
Major G. C. de L. Gaillard, The Sherwood Foresters.
Lieut.-Colonel O. C. Radford, Royal Engineers.
Captain F. Ward, M.C., The Royal Northumberland Fusiliers.
Captain F. C. Russell, Royal Artillery.
Captain A. F. Austen, B.E.M., R.A.O.C.
Major G. A. Coaker, R.H.A.
Lieutenant K. B. Cunliffe, R.A.C.
2nd Lieutenant N. A. Hayman, The Royal Warwickshire Regiment.
Major D. Jamieson, The Royal Norfolk Regiment.
Major R. W. Spencer-Smith, The Royal Hampshire Regiment.
Major E. W. O. Perry, Royal Australian Artillery.
Controller J. M. Cowper, A.T.S.
Captain C. G. Pybus, Royal Artillery.
Major H. F. Fane-Harvey, M.C., Royal Tank Regiment.
Major H. W. D. Cottan, Royal Artillery.
Major C. N. Barker, M.C., The Gordon Highlanders.
Captain N. O. E. Witt, R.A.S.C.
Lieutenant P. E. Abbott, Royal Artillery.
Major P. H. Parker, The King's Royal Rifle Corps.
Brigadier R. J. Streatfeild, D.S.O., T.A.
Lieut.-Colonel W. I. Moberly, O.B.E., Indian Army.
Major H. B. H. Waring, The Queen's Own Royal West Kent Regiment.
Major A. A. T. Hiscock, Royal Engineers.
Captain David Laird, Royal Artillery.
Lieutenant C. H. C. Pickthall, Royal Artillery.
Lieut.-Colonel C. J. H. Mead, late R.A.S.C.
Major S. M. Yeoman, Royal Artillery.
Major A. D. Brindley, M.B.E., Royal Signals.
Captain J. N. Agnew, Coldstream Guards.
Colonel P. F. Pearson, late The Buffs.
Captain E. I. V. Tuite Dalton, M.C., Royal Artillery.
Major S. Douglas Clarke, The Cameronians (S.R.).
Brigadier J. W. L. S. Hobart, C.B.E., D.S.O., M.C.
Captain C. S. Maple, R.E.M.E.
Lieut.-Colonel J. E. B. Barton, late Indian Army.
Officer Cadet J. R. Gillum, R.M.A., Sandhurst.
Captain E. E. Toms, The Seaforth Highlanders.
Major T. M. Hunter, Royal Canadian Army.
Captain P. M. Clayton, R.A.S.C.
General Sir J. A. L. Haldane, G.C.M.G., K.C.B., D.S.O.
Lieut.-Colonel J. A. A. R. Frost, R.A.S.C.
Major W. A. P. Conran, M.B.E., Royal Engineers.
Captain E. H. Bullen, The West Yorkshire Regiment.
Captain A. T. Shaw, The King's Regiment (T.A.).
Lieut.-Colonel C. O. R. Mosse, late Indian Army.
Lieut.-Colonel P. H. Girling, R.E.M.E.
Captain J. B. Jenkins, Royal Artillery.
Brigadier G. C. H. Heron, O.B.E., R.A.O.C.
Lieut.-Colonel D. B. Booth, R.E.M.E.
Mr. H. Y. Usher, late 1st Cadet Co., 8th Bn. The Lancashire Fusiliers.
Captain W. G. Crichton, R.A.S.C.
Major R. F. Mortimer, Coldstream Guards.
Lieutenant P. G. T. Walker, The Queen's Bays.

Lieutenant A. O. Shipley, Royal Artillery.
Major F. G. Bolam, Royal Signals.
Major T. P. Kidd, M.C., Royal Artillery.
Captain R. S. Moglove, The Royal Fusiliers.
Lieutenant G. N. R. Whitfield, M.C., 8th (K.R.I.) Hussars.
Major R. B. Rainsford, Royal Artillery.
Lieut.-Colonel J. Y. B. Sharpe, Royal Artillery.
Major J. P. M. Budgen, Royal Artillery.
Lieutenant P. D. O'Driscoll, The Royal Sussex Regiment.
Major R. M. Grierson, Royal Tank Regiment.
Captain J. P. Foulds, Royal Artillery.

ROYAL AIR FORCE

Squadron Leader H. R. Allen, R.A.F.
Squadron Leader H. F. King, M.B.E., R.A.F.V.R.
Squadron Leader P. Cartridge, R.A.F.
Flying Officer W. E. Satterthwaite, R.A.F.
Wing Commander F. Murray, R.A.F.
Squadron Leader J. R. Burges, R.A.F.
Wing Commander R. Milroy Hayes, O.B.E., R.A.F.
Group Captain V. Fairfield, O.B.E., R.A.F.
Flight Lieutenant A. W. Griffiths, R.A.F.
Squadron Leader M. H. Le Bas, D.S.O., R.A.F.
Squadron Leader J. R. Valentine, D.F.C., R.A.F.
Flight Lieutenant R. J. Hopkins, R.A.F.
Group Captain H. R. Withers, O.B.E., R.A.F.
Squadron Leader R. L. Lamb, R.A.F.
Squadron Leader C. B. McGhee, D.F.C., R.A.F.
Mr. J. B. Salter, Civil Functionary, Air Ministry.
Squadron Leader P. Dobson, D.S.O., D.F.C., A.F.C., R.A.F.
Flying Officer L. S. King, R.A.F. Regiment.
Squadron Leader E. D. Crew, D.S.O., D.S.C., R.A.F.
Wing Commander N. B. Harvey, D.S.O., R.A.F.
Flight Lieutenant T. B. Robinson, R.A.F.
Flight Lieutenant A. B. Avery, R.A.F.
Group Captain J. W. Black, Royal Australian Air Force.
Squadron Leader F. J. Howell, D.F.C., R.A.F.
Flight Lieutenant A. H. Porter, O.B.E., R.A.F.
Wing Commander J. A. Crockett, R.A.F.
Flight Lieutenant D. F. Shepherd, R.A.F.
Squadron Leader P. S. Dundas, R.A.F.
Wing Commander C. G. S. Rowan-Robinson, D.S.O., D.F.C., R.A.F.
Squadron Leader G. W. Curry, D.S.O., D.F.C., R.A.F.

INCREASE OF SUBSCRIPTION

The rates of subscription to the R.U.S.I. have remained the same since the comprehensive Annual Subscription of 25s. per annum and the Life Subscription of £20 were introduced in 1926, while the Entrance Fee has been suspended since 1936.

Expenses of every kind, but especially wages and printing, have increased so greatly that the Council have been compelled to ask for powers to increase Subscriptions.

At the Anniversary Meeting, held on 4th March, 1947, a resolution to alter the Bye-law governing Subscriptions was passed and, as from 1st January, 1948, the following will be the rates of Subscriptions:—

Annual Subscription	... ..	£1 10 0
Life Subscription	... ..	£24 0 0
or four yearly instalments of	£6 6 0 each.	
Covenanted Life Subscription—Seven	...	
yearly instalments of	£3 12 0 each.	

ADVANTAGES OF COVENANTED SUBSCRIPTIONS

Special attention is invited to the fact that Members joining during 1947 and existing Annual Members adopting the scheme of covenanting to pay their subscriptions for seven years will have the benefit of the present rate, *i.e.*, 25s. per annum until the expiration of the period.

Life Members joining during 1947 who covenant to pay their subscription by instalments of £3 os. od. a year for seven years will also get the benefit of this lower rate.

It is, therefore, much to the advantage of new Members to join at once under the Covenanted Scheme and for existing Members who have not yet adopted it to do so before 31st December, 1947.

All Covenanted Subscriptions materially assist the Institution because they enable Income Tax at the full current rate to be reclaimed on each subscription.

LIAISON OFFICERS

The following alterations to the list of Liaison Officers published in the February, 1947, JOURNAL and amended in the May and August, 1947, JOURNALS, have taken place :—

NAVY

Home Fleet	... ..	Lieut.-Colonel G. W. Ross, R.M.
R.N. Home Air Command	... ..	Captain S. J. S. Boord, R.N.
Flag Officer, Scotland and Northern Ireland.	...	Commander D. E. G. Wemyss, D.S.O., D.S.C., R.N.
School of Combined Operations	... ..	Lieut.-Colonel J. C. H. Eyles.
R.M. Barracks, Chatham	... ..	Major R. D. Crombie, R.M.
R.N. Barracks, Devonport	... ..	Commander P. W. Gretton, D.S.O., O.B.E., D.S.C., R.N.
Mediterranean Fleet	... ..	Lieutenant-Commander J. B. Lamb, D.S.C., R.N.

ARMY

Eastern Command	... ..	Lieut.-Colonel G. W. H. Peters, D.S.O., M.C.
Scottish Command	... ..	Lieut.-Colonel S. Ritchie, O.B.E.
London District	... ..	Major H. G. B. Knight, M.C.
British Troops in Austria	Lieut.-Colonel J. R. Johnson, D.S.O., M.C.

R.A.F.

Far East	Wing Commander R. D. Stubbs, D.F.C.
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JOURNAL

Members are invited to offer suitable contributions for the JOURNAL. Confidential matter cannot be used, but there is ample scope for professional articles which contain useful lessons of the War; also contributions of a general Service Character, such as Strategic Principles, Command and Leadership, Morale, Staff Work, Naval, Military and Air Force history, customs and traditions.

The Editor is authorized to receive articles from serving officers, and if found suitable, to obtain permission for their publication from the appropriate Service Department.

Army Officers are reminded that such articles must be accompanied by the written approval of the author's Commanding Officer.

REQUEST FOR BACK NUMBERS

The Editor will be grateful for any copies of the JOURNAL for February, May and August, 1946, also August, 1947, which Members may have finished with, in order to meet applications for this number.

CHANGES OF ADDRESS

Members are particularly requested to notify any change of address which will affect the dispatch of the JOURNAL.

Naval Officers' Addresses

Naval Officers are strongly advised to keep the Institution informed of their address as JOURNALS sent to them via C.W. Branch of the Admiralty are invariably greatly delayed.

MUSEUM

ADDITIONS

Model of three Naval Shells of a type fired in the bombardment of Alexandria, 11th/13th July, 1892. (9344.) Given by Lieutenant-Commander A. F. Inglefield, R.N.

Dirk of the pattern 1820-1835, worn by Lieutenant John Franklin, R.N., who entered the Royal Navy in 1830. (9345.) Given by Commander C. P. Franklin, R.N.

Piece of the 24-in. Anchor Cable recovered from H.M.S. "Royal George." (9346.) Given by Messrs Larmuth and Bulmar, Ltd.

Helmet and Steel Cover worn by a pilot of the crack German target locating Squadron K.G. 100. (9357.) Given by Group Captain C. E. Chilton, C.B.E., R.A.F.

Twenty-three Clasps to the Naval General Service Medal. (9348.) Purchased from the Royal Mint.

A Naval Signal Book of about 1750. At the back are Lord Anson's Additional Signals—1758. (9349.) Given by Commander F. G. Loring, O.B.E., R.N.

A Naval General Service Medal with Clasp of Gluckstadt, 5th January, 1814, granted to Midshipman J. Rainier. (9350.) Given by Captain J. W. Rainier, R.N.

Full Dress Uniform of an Officer of the 9th Lancers. (9351.) Given by Lieutenant-Colonel R. H. R. Brocklebank.

China Cup, one of a set in commemoration of Nelson's battles and inscribed with the dates 1797 St. Vincent, 1798 Nile, and 1801 Copenhagen. It was obviously made before Trafalgar. (9352.) Given by Miss Janet Johnson.

Model of a Blackburn Firebrand Mark IV, Torpedo Fighter. (9353.) Given by Blackburn Aircraft, Ltd.

CHRISTMAS CARDS

Christmas cards, specially designed for Members of the Institution, are on sale and orders can be booked now.

Card A has a coloured picture of types of Her Majesty's Services at the time of the Crimea surrounding a medallion of the head of Queen Victoria, to whom the Institution is indebted for the gift of the use of the Banqueting House as part of its premises, and of the Prince Consort—a former Royal Patron. Inside is the Institution's crest. The price, including envelopes, is 12s. per dozen.

Card B has the crest of the Institution on the outside and inside is a reproduction of a black and white sketch of the exterior of the Banqueting House. The price, including envelopes, is 9s. per dozen.

Postage in each case is 6d. for one dozen and 2d. extra for each additional dozen.

Members are requested to make early application for the number of cards they require, stating which design, A or B, and enclosing the requisite remittance with their order.

LECTURES

For the convenience of Members the list of lectures arranged for the New Year is published as a separate looseleaf notice inserted in this JOURNAL.

DAY FOR LECTURES

The Council wish to obtain the views of Members as to whether Wednesday is the most suitable day for Lectures.

It has been suggested that Friday would be more convenient, especially for Members living out of London. On the other hand, this might not suit Members who live in or near London and who at present form the greater part of the audiences.

Members are invited to write to the Secretary giving their views as to whether a change would be generally beneficial.

No change can be made in the case of Lectures during the remainder of the 1947-48 Session, as these have been arranged for Wednesdays.

"WHAT TO READ"

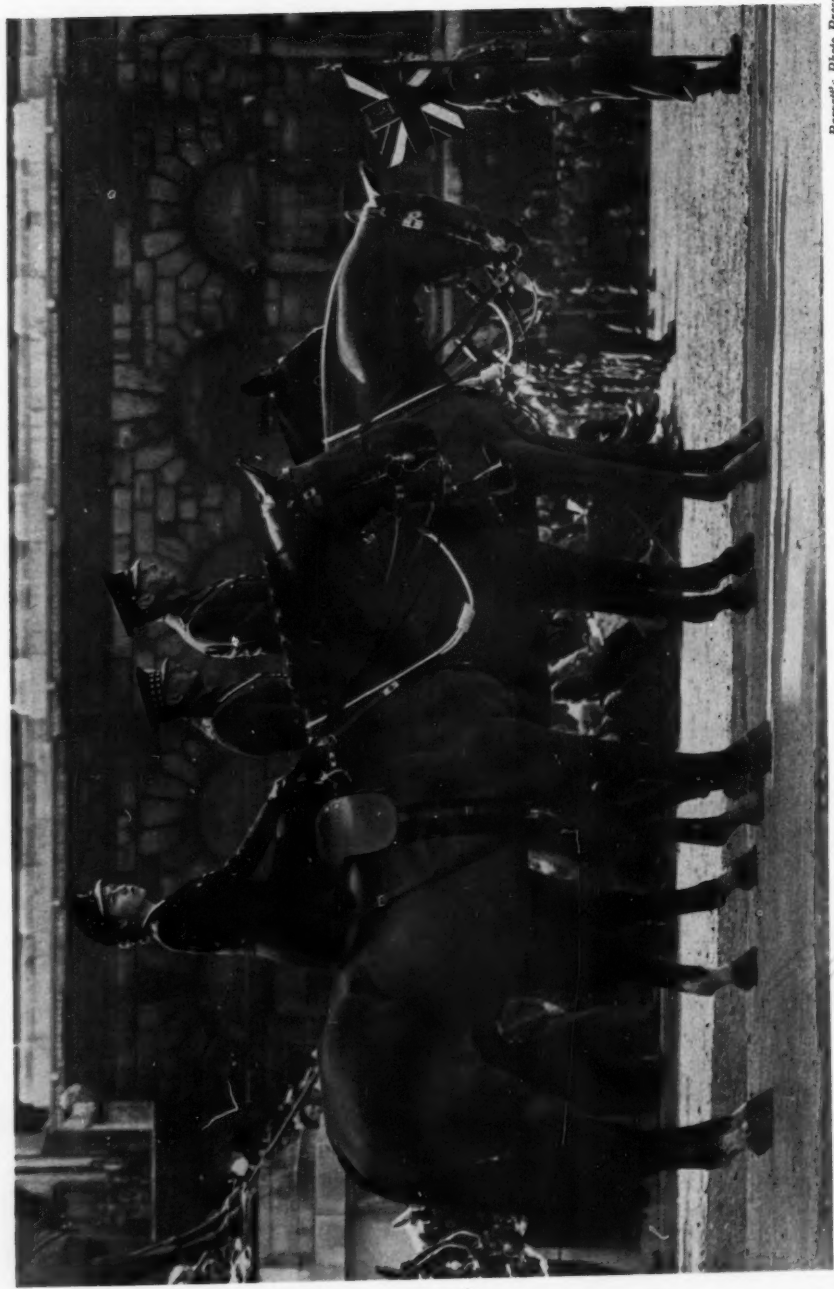
The articles on "What to Read," which have appeared in the JOURNAL, have been brought up-to-date and republished in pamphlet form. Copies can be supplied, price 1s. 6d., post free.

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THE ROYAL PATRON, VICE-PATRON, AND PRESIDENT
of The Royal United Service Institution

THE JOURNAL of the Royal United Service Institution

Vol. XCII.

NOVEMBER, 1947.

No. 568.

[Authors alone are responsible for the contents of their respective Papers.]

All communications, except those for perusal by the Editor only, should be addressed to the Secretary, Royal United Service Institution.]

HIGHER TRAINING FOR COMBINED COMMAND

By GENERAL SIR WILLIAM SLIM, G.B.E., K.C.B., D.S.O., M.C.

On Wednesday, 1st October, 1947

FIELD-MARSHAL LORD WILSON OF LIBYA, G.C.B., G.B.E., D.S.O.

(Chairman of the Council), in the Chair

THE CHAIRMAN: I am sure that General Slim needs very little introduction as we all know his brilliant record in Burma, and that he is now Commandant of the Imperial Defence College.

To-day he is going to talk to us about higher training for combined command, and without any further delay I will ask him to deliver his address.

LECTURE

BEFORE we start to make anything it is as well to be clear what kind of article we are trying to turn out. That applies whether it is mousetraps or men we are after; in this case, it is men—a special kind of men, those capable of commanding combined forces in war. What sort of men do we want for that?

QUALIFICATIONS

Modern conditions have made all operations, even small ones, combined; but what we are considering here is high command—the command of large forces on the level from Army Commander to Supreme Commander. We must aim, therefore, at producing, not merely officers who can command forces of their own Service in co-operation with others, but who are capable of exercising operational command of *all* services—fighting and civil. You will note I include civil. An officer who reaches high command in war will almost certainly find himself confronted with great problems of civil administration; he may, indeed, be responsible for every aspect of the government of a whole nation. This, if at the same time he is conducting one or two major campaigns, is no ordinary task, and requires no ordinary man. It needs a man with many qualities but, of the many, certain are, I think, basic.

WILL AND JUDGMENT

The old *Manual of Combined Operations* laid down that Commanders in combined operations should possess certain qualities. The bridge tables of any London club would supply plenty of amiable elderly gentlemen who met those requirements,

but something a bit tougher than co-operative charm is, I think, required. After all, the first duty of any commander is to command: to make decisions and to see that they are carried out. Now, to make the right decisions, he needs judgment; to force them through, as he will have to, against the opposition of the enemy, of unwilling allies, of his own distracted politicians and of doubting subordinates, he needs above all, strength of will. I would put this exceptional determination, this power to persist until by a mixture of persuasion, force and example he has compelled others to do what *he* wants, as the first quality of a commander. Without it he cannot be a leader at all. But the more he has it, unless it is directed by sound judgment, the more will it be a costly, dangerous and perhaps fatal quality. The fanatical determination of the Japanese commanders to force through their rigid plans was a weakness which we were able more than once to exploit. Our prospective higher commander must, therefore, have in a marked degree and in combination, strength of will and soundness of judgment.

FLEXIBILITY OF MIND

A man who has these will be a commander, but if he is to be fit for *high* command, he must have a third attribute. Not only do tactics and techniques change constantly and rapidly in modern war, but the whole background against which it is fought may alter almost as quickly. The advent of an ally, the introduction of a new weapon, a political change, may make what it was right to do yesterday wrong to-morrow. Even on the lower level of the tactical situation, some factor, unknown or overlooked when a plan was made, may suddenly appear and undermine the whole foundation on which an operation is built. To these, often startling, variations on all levels the commander must be able immediately to attune himself and to readjust his plans. More than ever, too, in these days of scientific advance will suggestions for new weapons, new methods, be constantly put forward. Revolutionary ideas will often be advocated by experts, men who have great knowledge in technical, but usually limited, fields. They will urge them with a faith and persuasiveness equalled only by the vehemence with which other experts will refute them. The commander must be receptive to new ideas and quick to appreciate their application to his problems, but he must be able to distinguish the valuable and practical from the fantastic. He must have imagination—but *controlled* imagination. This side of his character is best described, I think, by saying he must have flexibility of mind. And here comes a conflict which has been the ruin of many commanders—the holding of the balance between strength of will and flexibility of mind. This is not easy to maintain and, unless both qualities are a natural growth implanted in the character, one or other will predominate to a dangerous extent. I have seen a commander ruin himself because he thought that to accept advice or change his mind was to show weakness. I have seen another, with many fine qualities, flounder because he was too easily persuaded by the last man he talked to. The mark of the successful commander is that he never allows strength to degenerate into obstinacy or flexibility into vacillation.

CHARACTER

If the man we are trying to find has strength of will and soundness of judgment he is likely to be a successful, even if a limited, commander. If added to these is flexibility of mind, he will certainly be a successful commander—perhaps a great one. But, if he is to hold the highest levels, he must be more than a great commander in the field, he must be in himself a great man. That means that all these qualities of will, judgment and mind must be based in an essential honesty of

character. He must have a massive and simple integrity. A major ingredient of this is, of course, moral courage. He must be as big as his job, which in the long run means he must not be afraid of losing it. He must not pander to popularity and applause. He must be bigger than these things—and more simple.

I believe, too, that for the British fighting man and for the British public to have real confidence in a leader, he must show this integrity in his own way of life. Otherwise, as long as he is successful he may be followed, but he will not be trusted to the last. This may be a relic of our Puritan ancestors, but it is, I think—and hope—fundamental in us. It is good that it should be so, for the only foundations that will stand under the final strain are the moral ones. When a commander has these things in himself, those who deal with him will feel them and they will inspire an unshakable confidence.

Well, there we are. I have enumerated a formidable list of the basic qualities our higher commander should possess—strength of will, soundness of judgment, flexibility of mind, integrity of character. You will not have failed to observe that none of these is the sort of thing that it is easy to teach. Indeed, there is a great deal of doubt whether they can be taught at all. It is, at any rate, certain that the later in life their inculcation is begun the more difficult it becomes. I believe myself that the seeds of all these qualities are planted, if they are planted at all, in the child, long before he grows up, by his parents, his home influence, his schooling and his early religion. Later in adolescence and manhood, given the opportunity, they can be developed, but it is no use watering the ground if the seed is not there.

SELECTION

Our first problem, therefore, in the production of higher commanders is not one of training, but of selection—how to get hold of the youth who is a potential leader. Can we spot him while he is still at school? We might make a guess in a boarding school, perhaps, but school values, with their scales weighted on one side towards academic distinction and on the other towards athletic prowess, too often do not correspond to achievement in later life. Top boys are not always top men, and it is astonishing how often the fellow who was undistinguished at school rises high in the world.

As long as Conscription is in force, the problem of getting the potential leaders into the Services is simplified because, automatically, we get a cross-section of the youth of the country—good, bad and indifferent. All come. This, although I have never heard it mentioned as such, is from the Services' point of view one of the greatest benefits of Conscription because, somewhere in the herd, under our hands, are the future champions. It is for us to recognize them, persuade them to adopt the profession of arms, and give them the opportunities to develop.

In the broadest sense selection should thus start with the arrival of the recruit. Not yet selection for the higher commander—it is too soon for that—but for the potential leader of lower grade. The youth who shows courage, intelligence—not necessarily education—and character well above the average, should be early recognized and earmarked for training as an officer. It is important that such a youth should not be left too long in the ranks. The sooner he gets into the officer atmosphere with its higher standards, its more unselfish outlook, and its greater demands on self-reliance and leadership the better. We are not at this stage attempting to pick out young Eisenhowers; we are out to get good, efficient junior officers. The responsibility of Commanding Officers is great and, if they fulfil it properly, our future higher commanders will surmount the first obstacle—a very

real one in peace time—the obtaining of a Commission. We shall have thus a wide and firm base for our pyramid of selection.

Again, at the Cadet College or University to which they pass, the object of selection should not be to earmark future Supremos. It is still too early. The standards of these places are rather like those of the school, and cadets and undergraduates in normal times are immature creatures. The process here should be weeding rather than forcing—the throwing out of any who show themselves to be below standard either in ability or character. The fault of our Cadet Colleges, at least in the Army, has been in the past that we have hesitated to weed drastically enough. It is, I am convinced, better to fall below establishment in officers than to fill up with inferior material; better ten first-class officers than ten good and ten indifferent. At the same time, in this weeding out we should be careful not to measure too much by a standard pattern. Allowance must be made for the young man who is different—even a bit odd. We were not always very tolerant of variety in the past. I can remember, in the days of the supremacy of the horse, the young officer who said that he thought the proper place for a horse was a zoo and that, if it was training in instant decision you wanted, you would get more practice if you rode a motor bike at an average of 15 miles an hour from Hyde Park Corner to the far end of Shaftesbury Avenue any Saturday morning at about half past twelve than you would in innumerable chukkers of polo. He was regarded by his outraged seniors as not quite a gentleman and certainly not the type of chap likely to be a good officer. We must make room for those who have the basic qualities of leadership even if they do not conform to pattern in some other ways.

TRAINING

If we are going to have a choice of higher commanders later, the next few years of the young officer's service are tremendously important. Too often in the past these years in peace, instead of developing his qualities, blunted them. He had neither enough work to keep him interested and occupied, nor had he the scope to exercise his judgment and his powers of leadership. If, after ten consecutive years of peace-time soldiering in many battalions, a young officer was ever likely to be fit for more than unit command, he was a very exceptional fellow. The Navy and the Indian Army were better at giving responsibility early, and they benefited by it, for the only way to develop latent powers of leadership is by constantly using them. The reluctance of many Commanding Officers to let their best youngsters go to extra-regimental employment where they can get this practice has to be overcome. This reluctance is very understandable in war but has little excuse in peace. For the efficiency of the Services as a whole, and to give variety in experience to young officers, it must be overcome.

There is another aspect of preparation for high command which should receive more attention at this period than it often does—experience in administration. Now that the legions are being called home, many young officers will pass the bulk of their early service either in this Country or in Germany, where so much in the way of administration is laid on for them. Not only may they lack actual practice in the many sides of supply, transport and man management but they may come to think that such matters may be left to others whose special business they are. I always think it is a pity that in the British Army the Quartermaster belongs to a class of professional Quartermasters. It seems to me that a system by which the ordinary junior regimental officers would take their tour of duty as Quartermasters in their

units would be a better arrangement. It would be much more valuable for an officer who reached command level to have been a Quartermaster than to have been an Adjutant. A higher commander must have a wide knowledge of administration, and the sooner he begins to get it the better. Equal with the need of the potential commander for administrative experience is his need for broadening his knowledge of men—and not only of men in uniform. I believe it would pay the Services to encourage junior officers in the first five or six years of their service to take leave for one year, and spend it as an ordinary working man in industry—as miners, steel workers, railway men or agricultural labourers. A commander must never lose the human touch with his men and, if he is to command great wartime armies, fleets and air forces, he must instinctively understand the civilian workers who will form them. The best way to do that is, as a young man, to work with them as one of them.

THE STAFF COLLEGES

The first real move towards selection for eventual higher command should, I think, come after the young officer has had five or six years regimental and extra-regimental service. This should be enough for his Commanding Officer and Brigadiers or equivalents to say he has shown the qualities required in a sufficiently marked degree. He should then be encouraged, or if necessary urged, to enter his Service Staff College. Here his instructors should be able to make a reasonably accurate assessment of his present worth and future growth. Then, as they pass out of the Staff College, a few selected officers can for the first time, without undue publicity, be noted for special attention in their careers. There may, in fact will, be one or two who have not passed through the Staff Colleges who will justify inclusion in such a category. They should be equally watched and given opportunities. This first selection should include officers likely to reach either high command or the most important staff appointments.

To a considerable extent from now on the careers of these officers should be mapped out by the Military Secretary or his equivalent in the other Services. The main requirements are to provide them with both command and staff experience of as great a variety as possible and to bring them into working contact with the other Services, civil authorities, science and industry. The Military Secretary and his other Service brethren have already a difficult enough assignment, and to make them fairly godmothers to a number of potential supreme commanders is to add a very difficult task to their burden, but it is the only way in which the selected officers can be assured of the right experience. One of the greatest difficulties will be to space the various appointments in time, so that the officer will, after passing through the Joint Services Staff College, arrive at his first Colonel's or Brigadier's appointment at an early enough age—not later, I think, than forty.

The officers thus earmarked will gradually show themselves to be better fitted to become either commanders or staff officers. A few exceptional ones will shine as both. There is a distinction between the make-up of the commander and of the staff officer, certainly on the lower levels and, I think, on the higher too, even if it is only that the staff officer should be very hardworking, and the commander preferably have a tinge of idleness in his composition. I once discussed this difference in type between commander and staff officer with General Eisenhower. While he agreed that often a good commander would not make a good staff officer, he would not admit that a man could be a good staff officer and not be also a good commander. He said that, at the higher levels, the staff officer had, not only to lead and control

a large staff, but frequently to act and make decisions for his commander. If he was to do this, he must be himself a commander. The General added that this was the only thing on which he had differed seriously from his British Allies. However this may be, by the time our selected officer has held his first Brigadier or equivalent appointment for a year or two, either on the staff or in command, we should be able to judge the likelihood of his going much higher. If we seem to have picked a winner, he should be nominated to the Imperial Defence College, where for a year he will study, with the pick of the other Services, the Civil Service, scientists and of all the Dominion Services, the problems of defence in their widest aspect.

THE IMPERIAL DEFENCE COLLEGE

This will normally be the third Staff College the officer will have attended on his progress to high command. It seems a lot. Do we, in the fighting Services, overdo this business of education? I do not think so. I believe that if there was one kind of institution in the Empire that paid a big dividend in the last war it was these Colleges. That we were able to avoid the complete destruction of our small and ill-equipped forces in the early stages of the War, to hit back so effectively with inferior numbers, to build up great forces and to achieve final victory in the field against the toughest of our enemies, was in large measure due to the fact that all Services had commanders and staff officers trained to a high pitch of efficiency, co-operation and mutual understanding. And it was these Colleges which produced them, while their countrymen were laughing at "Colonel Blimp." In whatever the hard economic facts of our situation to-day compel the Services to economise, it should not be in such educational establishments. Difficult as it will be, if we have another war, to train fighting men and to provide equipment, it will be more than difficult, it will be impossible, to produce competent commanders and staff officers in the time we are likely to get. They must be ready at the start.

These Colleges, especially the Joint Staff College and the Imperial Defence College, are in effect the only places where theoretical training in high command is obtainable. As the number of officers of the fighting and civil Services, who have had opportunity to see that high command at work and to take even subordinate parts in its machine, dwindles, so does the importance of these places increase. As science advances its horizons, as the balance of power among nations changes, as fresh industrial potentials emerge, and as the mentality of the religious wars of the past reappears in the World, so does the vital necessity increase for the training of the men—Service or civilian—who will face and handle these forces. At a stage in their careers just before they begin to enter on higher responsibilities it is most important that selected officers should have an opportunity, free from the pressure of everyday business, quietly to study the major aspects of modern total war. This period is made immeasurably more valuable when it brings together those officers of the fighting Services, the Civil Services and the scientific departments who are themselves likely in a few years to hold key appointments in national defence. For them to work together, to exchange ideas and to get to know one another, is an immense contribution towards the efficiency of future Commonwealth defence. The Staff Colleges and the Imperial Defence College are essential steps in the selection and training of higher commanders.

HIGH COMMAND

After passing out of the Imperial Defence College, the officers of the fighting Services should, in due course, be given their first appointments of Flag, General

and Air rank. Thence onwards it should not be too difficult to pick out those who will climb to the next rung, or to separate those clearly marked as outstanding commanders from those whose capabilities and character fit them best for high staff appointments.

When all is said, we come back to the fact that the best training for any command, most of all for high command, is to exercise it. Right up the ladder we should aim at giving our potential commanders all the responsibility possible of the sort they will be asked to shoulder in war. That is one reason why I should like to see retained in peace certain commands under Supreme Commanders, who have operational control of all three Services. They will be required in war; indeed, they will be essential if we have allies. Unless we have Supreme Commanders in peace, not only shall we lack officers experienced in the special requirements of Supreme Commanders, but we shall invite confusion by changing organization and commanders after the war has begun.

In spite of our best efforts at ensuring the right selection, training and even experience in peace, there is one factor which is incalculable—war. You do not need me to tell you that the remorseless test of battle often finds wanting the selections of peace and sometimes, though more rarely, thrusts to the front a man who, without that stimulus, would have remained in the rear-ranks. We have all seen instances of that—the brilliant peace-time exponent of strategy who cracked through some flaw in his character in war; the ordinary fellow on whom battle acted as a tonic, until he was unrecognizable as his former rather dull self. We must be ready to seize on him when he appears in war, and to push him on, but what we have to do now, in peace, is to find and train the higher commanders with whom to begin the war.

This is not an impossible task. If we know what we require in our higher commanders we can produce them. We have the material, we have the tradition, we have the accumulated knowledge. We can, by insisting on a really high standard of ability and character for all officers, widen our first field for selection. We can, fairly early in their careers, ear-mark potential commanders. Then at stages we can direct the right officers into channels where they will gain experience and opportunities to develop all facets of leadership. At intervals they can be given periods of joint theoretical study and training. The thing to remember is that there is no doubt that where they exist the essential qualities of higher leadership can be developed—judgment by experience, determination by responsibility and flexibility by variety. In these days, we are all urged to produce—there is nothing a nation can produce more valuable than its future leaders.

DISCUSSION

CAPTAIN E. ALTHAM, R.N.: One attribute of a higher commander, which I think the Lecturer just touched upon but which perhaps deserves some further attention, is that of personality. Related to it is the question of how that personality can make itself felt.

It is traditionally distasteful in the Services to publicize individuals, and yet surely history has shown the great importance of a commander's personality pervading not only the rank and file of the forces he commands but even the general public in his own country and that of Allies, because through that personality he inspires confidence. In this connection one naturally recalls the Supreme Commander in the late war—General Eisenhower. Here, it seems to me, we had an example of great personality with the appropriate publicity, but conveying the impression of sincere modesty coupled with great strength of character—the two combining to inspire loyalty and confidence.

I wonder whether the Lecturer would care to elaborate that point.

The LECTURER: The attribute of personality is, of course, a combination very largely of the qualities which I endeavoured to bring out in my talk. Publicity is a matter of putting over the personality of a commander. When a man becomes a commander you will find a lot of people rushing forward to put over his personality! There is a danger here, and if he is not careful, the commander may find himself putting his hat on at a certain angle and making faces in the mirror to see if he can look just as the publicity people say he does look! That is a very bad thing, because a commander has to be himself. If he has to walk about thumping himself on the chest saying "I am strong," that shows he is not strong.

I do not think if a commander is wise he will go in very much for publicity outside his own troops or command until he is extremely well known *inside* that command. A soldier does not like to look at the newspaper and learn what a marvellous commander he has. He likes to see his leader, to ask him questions, to see if he can answer them, and discover what sort of a fellow he is. To those who will reach high commands—and I say this with deference to those who have had them already—I would say, on this question of publicity, go very carefully with the banging of the drum and clashing of the cymbals until you are really known to your own troops. When you are very successful, you will get all the publicity you want and probably more.

There are many dangers connected with publicity. The life of a high commander is a very lonely one, and publicity is not good for him unless he is an extremely level-headed man. It is something which requires a great deal of watching. It is a thing which can easily get out of hand and swamp a man.

CAPTAIN W. W. DAVIS, R.N.: Could the Lecturer tell us whether he thinks we have anything to learn from the Germans in regard to high command?

The LECTURER: I think we have something to learn from almost everybody, but our command was much better than that of the Germans, in my opinion, especially on the higher level. All the way through the last war the British High Command—the general direction of the war, would bear comparison with any other command. I think one direction in which we excelled was the way we achieved our results with so little loss of life. I believe our commanders wasted fewer lives than any other commanders, both of our Allies and of the enemy.

MAJOR-GENERAL G. G. WATERHOUSE: I was particularly interested to hear what the Lecturer said about the necessity for keeping up our staff of officers for war expansion, because I remember after the 1914/18 war, a senior British officer saying he had asked one of the French Marshals what was, in his opinion, the most remarkable thing which had happened in the whole of the war, and the reply he received was that Great Britain with a peace-time Army of six divisions had raised and staffed an army of over seventy divisions.

The LECTURER: If you have a large number of officers, every platoon will be a small body of men entirely surrounded by officers, which is not a good thing! For our officers for the lower commands I think we should fall back very largely on the Territorials, and in the Regular Army we should aim at having a *Corps d'Elite* of officers for the purpose of building up higher commanders. The characteristics of a good Englishman in any class are the characteristics of an officer and we have available almost unlimited material for the regimental officer.

We have an immense source of potential officers, and if we can only get at them through some organization like the Territorials and give them training, I believe we shall again be in a position to repeat that which astonished the French and other people, namely, the production of a large army well-officered from a very small nucleus.

GROUP CAPTAIN B. S. CARTMEL: You stressed in your lecture the importance of administration in high command. I do not know whether there is a common meeting ground to-day for the three Services to study higher administrative problems, but in

1941/42 a small number of us in the Royal Air Force were privileged to serve on the staff of the Combined Training Centre, Inveraray, where we studied and resolved, among other things, inter-Service administrative and "Q" problems. We took part in exercises with Force 110—later 1st Army, which went to North Africa in November, 1942. I feel without that previous experience in Scotland, our forward troops and supporting fighter wings in Tunisia might have suffered even more privations through lack of supplies, especially when the "Q" plan in North Africa had to cater for the ever-increasing needs of the U.S. Army and Air Forces which were moving up through our zone from Oran and Casablanca.

I should like to pay tribute to the 1st Army organization which so ably handled this delicate and intricate build-up task.

My own experience at the Staff College before the War was that too small a percentage of the syllabus was devoted to administrative and "Q" matters and many inter-Service problems remained unsolved and untested at the outbreak of war.

I should like to ask the Lecturer whether some form of Combined Training Centre exists or is visualized for the advancement of inter-Service administration in its widest sense.

The LECTURER: I do not know whether I am the person to answer that, but notice that the officer who taught me "Q" work at the Staff College is present, and I think he would be very hurt at your remark that only 5 per cent. of the time at the Staff College was devoted to "Q" matters. In my recollection, it was a good deal more than that.

We have, of course, the Staff Colleges, especially the Joint Services Staff College and the Imperial Defence College, where problems are treated as completely combined and integrated problems. There is also the Combined Operations School. So I do not think you need have any anxiety that these matters are not being considered jointly. Any tendency not to do so would, of course, be fatal; and that is one of the reasons why I tried to emphasize what I believe to be the tremendous importance of these institutions where the Services, the Civil Service and scientists all work together.

MAJOR G. E. J. WARLAND: During the last war selection in the lower ranks was greatly facilitated by scientific tests: that is manual tests, mental tests and interviews by psychologists. I should like to ask the Lecturer whether he feels that such tests might be of assistance in the selection of officers for very high commands.

The LECTURER: I do not think so. I think by the time you have an officer up to the point at which you are considering him for higher command there would be little to gain from any tests I know of that kind.

I believe in those tests quite a lot lower down. I think intelligence and efficiency tests can quite usefully be combined with other things in the original selection for officers, but when it comes to high command I do not think there is much to be gained from these character and intelligence tests. By that time a man's capabilities, temperament and character should be well enough known to those who have to make the choice.

THE CHAIRMAN

Having listened to the Lecturer, I am beginning to realize where I fell down on some of his requisites! It does strike me that the question of training for high command in the future will have to be considered in the light of the probability that it will be through the medium of task force commanders, as the Americans call them, and I feel that in our training we shall have to bring in the requirements of a task force commander.

In connection with this question of higher training, I should like to call your attention to Lord Gort's dispatches concerning the operation at Dunkirk. He, as Commander-in-Chief of the British Forces, put in his dispatches the plea that he had to deal with so many extraneous matters that it was necessary to have an immediate

commander of the troops. Therefore one has to realize that there are two kinds of commanders: there is the commander of the troops and the Commander-in-Chief who deals with all extraneous matters and that, in its turn, has probably produced the necessity for a Supreme Commander.

The Lecturer mentioned dealings with experts, and we all know about experts: there are liars, bad liars and experts! I always feel myself that the chief of staff is the man who should protect the commander against too much pressure from the experts, and I think in educating the commander you have to educate the chief of staff as well, so that he can protect the commander from being pushed about by the experts.

The next important question is that of getting to know other Services, and a great deal can be done in that direction by combined exercises at Staff Colleges.

In considering commanders, I think one must realize that every commander has his ceiling and you cannot push a man beyond his ceiling. I know that from my own experience in the first World War, when I served in a Corps under a most brilliant divisional commander who did wonderful work in the battle of the Somme. That divisional commander was promoted to corps commander, but he was out of his depth at once. The fact that every commander has a ceiling must be borne in mind and, of course, it is up to those above to spot those commanders who are reaching their ceiling and those who can go beyond it.

One of the things which strikes me most forcibly is the fact that a high commander is going to be very lost unless he has political acumen. He has to have the means of gauging political influences and their effect on strategy or any other contemplated operations. Another thing about which the commander has to know something is diplomacy and diplomats. The diplomatic mind is a great deal different from the military mind, and diplomatic language differs a good deal from military language. If a high commander acquired a knowledge of diplomatic procedure and language I feel it would save him a great deal of blood pressure!

I heartily agree with what the Lecturer said about our schools. There is no doubt that schools are the basis on which training is carried out. The American Army could never have accomplished what it did in the late war unless their Army schools had been first-rate.

I feel that another thing a commander has to watch is his ability to assess the character and efficiency of his subordinates. If he has not the ability to assess the value of his subordinates he is liable to be let down sooner or later.

Another point concerns dealing with superiors, because a high commander probably has to deal with superiors who are not Service men. He has to deal with Ministers and officials; consequently, the more he can get to know how Government offices work the easier will be his task and a great deal of time will be saved.

I think that covers all the remarks I have to make and it only remains for me on your behalf to thank our Lecturer for his most interesting and instructive address. (Applause.)

THE AIR ASPECT OF MARITIME OPERATIONS

INSTRUCTION OF JUNIOR NAVAL OFFICERS

By LIEUTENANT-COMMANDER R. CORBET-MILWARD, R.N.

THE influence of the air weapon in the maintenance of sea power is now so great that an extensive knowledge of it becomes part of every young naval officer's stock-in-trade ; indeed, the acquirement of such knowledge is only a first step in his study of the art of war.

An officer or rating may be required to fly as a passenger for the same reason that he may be ordered aloft in a man-of-war, namely, if it is necessary in the course of duty. But during the War little could be done to increase the sum of air knowledge throughout the Navy without disrupting the flow of trained men to the Fleet beyond the provision of action experience which in any case brought home to most people the significance of the air weapon. The War over, however, it becomes possible as well as essential to embody its lessons in an up-to-date training schedule and to outline the kind of air training appropriate to all executive officers in a Service which already has over 25 per cent. of its manpower devoted to the needs of its air component.

It is essential for the naval officer to reach a harmonious relationship with the element with which he will be so closely concerned. He acquires this relationship by learning the art of seamanship. It is necessary now for him at an equally early age to learn that airmindedness, no less than a love of the sea life, is a prerequisite for the successful naval officer ; in a word he must study " flight."

Naval officers are drawn from three sources : the lower deck, from which will come 20 to 25 per cent. ; Dartmouth College, which 50 per cent. of the remainder will join as Cadets at the age of 16 ; and Special Entry which provides the rest at the age of 18. For the sake of brevity, it is enough to consider the chief single source of supply, Dartmouth. Initiation there should, it is suggested, aim at awakening the air sense latent in most budding naval officers. It should take the form of interest lectures on pure flying with practical experience of the use of the primary glider, and sailplane. These aircraft, if the emphasis is on their recreational use, besides providing a splendid encouragement to a boy's zest for adventure, would prepare him for closer familiarization with the art of flying and its military application at a later stage. Gliding, indeed, and its extension, soaring, is the corollary of small boat sailing and should play its part in training to a similar degree.

Whether or not the young officer on leaving Dartmouth goes to sea in a training carrier instead of the cruiser as now, he will certainly make a closer connection with the air before his promotion to the rank of Acting Sub-Lieutenant. The occasion, however, for its more detailed study, particularly in the military sense, is clearly during the series of courses he must then undergo for the rank of Lieutenant. Although courses on Gunnery, Communications and so on will reveal aspects of the air problem, there must be an Air Course, and it should have the following aims :—

- (a) To remove the impression, if it then exists, that flying is an esoteric enterprise only within reach of a select few.
- (b) To enable an officer to comprehend the advantages of the air weapon and its limitations.

commander of the troops. Therefore one has to realize that there are two kinds of commanders: there is the commander of the troops and the Commander-in-Chief who deals with all extraneous matters and that, in its turn, has probably produced the necessity for a Supreme Commander.

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- (b) To enable an officer to comprehend the advantages of the air weapon and its limitations.

(c) To help him to assess the magnitude of its influence on the meaning of sea/air power.

(d) So to stimulate his interest in air matters as to encourage self-education in the future.

The method used should relate practical air experience to a series of lectures and vignettes framed to shed a light on the whole picture of aviation in its relation to the Navy.

Officers should receive an introduction to the subject of flight sufficient to leave them with a working knowledge of "how an aeroplane flies." The organization and administration of the Navy's air component ashore and afloat must be built up for them. They must reach an understanding of the functions, limitations and operational use of aircraft and aircraft carriers. They must learn to appreciate the aircraft as a weapon, a radar set and a reconnaissance unit. They must be taught some of the psychological features of naval flying so that they may, as it were, glimpse life through the eyes of the air crew, and they must receive an inkling into future developments in aviation.

Most of this instruction will derive from lectures based on "The Fighting Instructions," "Conduct of the Fleet," aeronautical publications and, up to a point, experience; but lectures in the academic atmosphere of the classroom cannot of themselves convey a proper appreciation of air matters nor the day-to-day life of the air crew. They must be linked with practical life. Of all air experiences, that of taking an aircraft up solo for the first time is perhaps the most fundamental, and the young officer should be brought to this standard on the current elementary trainer. In addition, he should be given as varied a series of air impressions as opportunity affords. What these impressions cover is obviously conditioned by such humdrum but necessary considerations as the facilities available and the length of the course. They must be framed on knowledge of the pupils' past, and should, at the least, include flights over land and sea in an aircraft representative of the type with which the fleet is equipped—for example the Firefly trainer.

But all this is not enough. A man remembers best what he has incorporated in his personal experience, and the young officer should see certain other aspects of air life at first hand. He should visit a naval squadron undergoing its operational training. He should tour an aircraft factory to appreciate the amazingly complex anatomy of a modern aircraft. He should, if he has not already done so, spend a day at sea in a carrier operating aircraft and, because the command of the sea is in part the province of the Royal Air Force, he should receive some impression of the work of that Service in its relation to the function of the Navy.

Such an ambitious instructional syllabus will never succeed in its objects unless the school charged to apply it is well found, that is suitably housed and properly run. The quality of the lectures must be in keeping with the absorbing subject matter. The carefully-evolved technique of flying instruction must have its counterpart on the ground in the shape of able and enthusiastic lecturers backed by a full range of demonstration equipment. The course, which, for various reasons, must take place at an air station, should be located at one which displays as many facets as possible of naval aviation. Above all, the young officer, impressionable and receptive as he is, should receive the impression of a highly-disciplined and efficient organism shot with respect for other institutions and branches of the Service.

It was soon after the War that the Admiralty decision was implemented that all young executive officers should receive extensive and practical instruction in

aviation. This decision has been welcomed by naval officers as a whole as a highly rational one and it is specially appropriate that it should receive expression at an establishment which has had already a long and intimate connection with naval air history, and is still remembered by many as the home of the Gosport School of Special Flying.

The Junior R.N. and R.M. Officers' Air Course was inaugurated at the R.N. Air Station, Gosport, in January, 1946. Lasting six weeks, it follows closely the lines indicated above and, in addition, plays an important part in the selection of officers for subsequent specialization in aviation. While it is too early as yet to judge how far it is succeeding in this aim, it has at least some solid achievement to its credit in the large number of Sub-Lieutenants who have soloed and those who have gone on to reach an accepted standard of proficiency on the Tiger Moths with which it is at present equipped.

The instruction of young executive officers in air matters should, it has been argued, begin on their entry into the Service, continue during their early years at sea, and intensify on the Junior Officers' Air Course. But to appear in the round it must have form as well as substance. Therefore, it is essential for them to see the significance of the naval air weapon in its proper perspective. The need is recognized at the moment in the Junior Officers' War Course. This Course is interwoven with the Sub-Lieutenants' Educational Course at the R.N. College, Greenwich, and is intended to form a background to the nine months of detailed courses in the Portsmouth area which follow, and of which the Air Course is one.

Unfortunately, the very nature of these courses ensures that the background becomes quickly and progressively blurred. They are short, often intense and culminate in important examinations. They are also self-contained; when finished, they are over and done with. Sub-Lieutenants, in the main, leap each hurdle with a thankful heart and without looking back, for they know that at the end of their last Course—Navigation, Air or whatever it may be—they will go direct to sea. Thus months of intensive study end in a damp fizzle with no time for appraisal or controlled reflection.

From this state of affairs the Air Course suffers most because the air influence pervades every aspect of maritime war. As a result the syllabus is always in danger of being choked with lectures on such subjects as the "Growth and Meaning of Naval Air Power," the "Employment of Carrier Groups," the "Inter-relationship of Air, Surface and Submarine Fleets," which are, or ought to be, inappropriate to the function of a brief detailed technical course but which are not elsewhere provided for or occur at the wrong time.

It is the writer's conviction that whereas a general introduction to these courses, such as takes place at Greenwich, is certainly valuable, a final summing up on their conclusion is essential, and the War Course should be reordered to provide both. It should be given in two portions. The first should include lectures of a general nature such as "Principles of War," "Imperial Defence," "Trade Defence," "The Other Services," and sketch in a pattern for the specialist courses to elaborate in detail. The second portion should occur at the end of these courses and embrace a period at the Tactical School. In this way the War Course would provide the epilogue, as it were, to a series of one-act plays on a common theme, linking them up and elucidating their part in the whole conception and, so far as the air element is concerned, enabling the young officer to view that aspect of maritime operations in its proper perspective against the varied background of war at sea.

THE STRATEGIC ASPECT OF THE ARCTIC

A TIME will no doubt come when planners will make little use of large maps hanging on walls. Even now many of us are too "Mercator-Chart-minded." We look at these rectangular maps of the world and see that a line drawn from New York to Leningrad passes somewhere in the neighbourhood of Wigan and jump to the conclusion that Britain, lying between America and Russia, is doomed to an ordeal in time of war similar to that of Sussex and Kent when the V-1's were launched against London.

Though no scientists have ventured to predict the result of the meeting of an irresistible force and an immovable object, there is little doubt what would happen to any vulnerable object which happened to find itself at the point of contact. If only for the sake of our morale, therefore, it is suggested that all operations rooms be supplied with large globes, sectioned at the equator, to correct an entirely false attitude due to countless generations of two-dimensional maps.

It is unnecessary to point out the enormous distances saved on flights between the hemispheres by following great circle routes. It might even be of interest to find out what were the main snags encountered by Sir Hubert Wilkins when he was planning twenty years ago to reach the North Pole by submarine. Nuclear propulsion might one day prove capable of surmounting these difficulties.

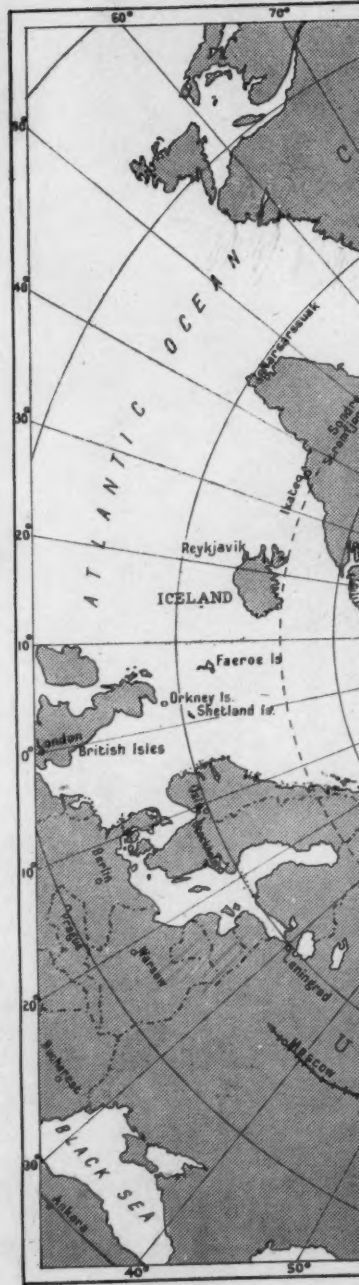
The distance covered on normal air routes between the United States and the nearest point in Russia, via the British Isles, is rather more than 4,200 miles; that by the great circle route via Iceland is a few hundred miles less. From the northern tip of Alaska to Leningrad over the Pole is, however, only 2,700 miles, while northern Greenland is only 2,400 miles from Moscow.

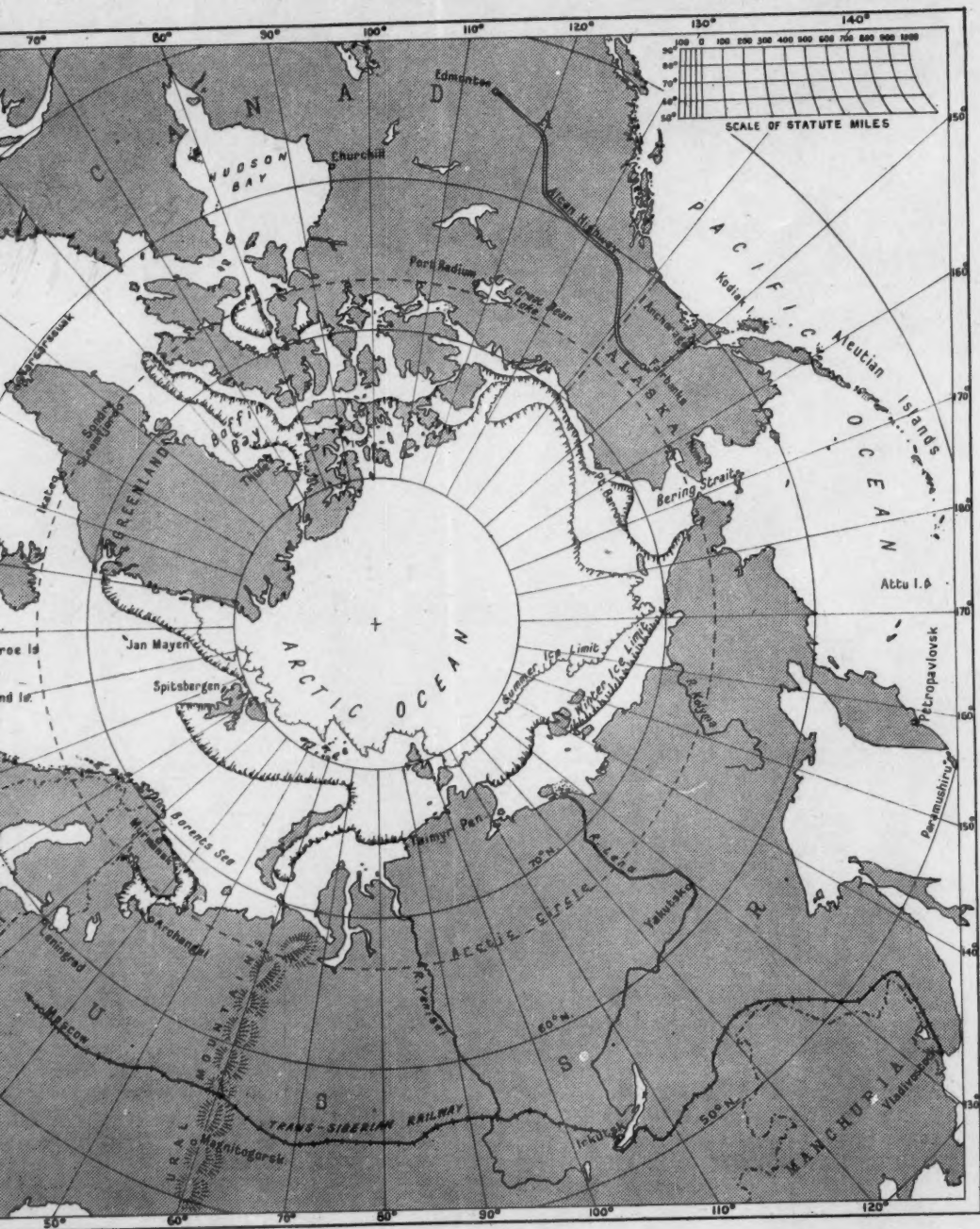
THE RUSSIAN ASPECT

Though they have not recently shown great advances in trans-polar flying, the Russians have settled and developed more than two million square miles of land in the Arctic extending over 160 degrees of longitude. Vast sums have been spent during the last fifteen years by *Glavsevmorput* (Chief Administration of the Northern Sea Route) forcing the passage which connects Russia's European ports with the Pacific. Many deposits of oil, coal, iron, copper, nickel, mica, gold and other minerals have been discovered. Great hydro-electrification schemes have been developed. Ports have been built, and a network of air routes set up. There are numerous weather stations and no doubt an elaborate radar system is being developed.

It is interesting to review the "reactionary" areas of the World from the Russian aspect. Spitsbergen, Iceland and Greenland loom very large in the foreground. Some strategists may be inclined to consider them too vulnerable for advanced aerodromes in time of war owing to their remoteness from the centres of population. Spitsbergen is, of course, so much nearer to Russia than to Britain (it is 1,200 miles from the Orkneys) that the Russians can probably rule it out as a possible hostile base. As a Russian base, it would, of course, be vulnerable to sea attack, especially during the long winter darkness, and the chances of sufficient supplies and equipment being collected, replenished and defended, would have to be carefully estimated. Approach to the Island during the Winter over the polar ice would have to be considered.

Spitsbergen is within 2,000 miles of Alaska and about the same distance from the most northerly inhabited points in Canada. It could well serve Russia as a





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stepping stone to southern Greenland, which in turn is within easy reach of Newfoundland and the great cities of Canada. According to press reports, Russia is intensifying economic pressure on Iceland and trying to obtain control of Spitsbergen from Norway. If, owing to inadequate sea power, Russia considered Spitsbergen too vulnerable in time of war, Murmansk would be the next choice. This port is ice-free all the Winter, is served by an electric railway, and has a population, including the surrounding district, of nearly 300,000. It would serve well as a jumping-off place, though considerably farther from Greenland.

Passing over about 90 degrees of barren and almost uninhabited country, the next area to be considered is the delta of the Lena—Russia's longest river. This great waterway is navigable for nearly 2,500 miles and connects the Far North with the Trans-Siberian railway. At first sight this appears quite suitable for the development of air bases, but there are considerable difficulties to be contended with. The river is only navigable for half the year and the mouth is sometimes blocked by ice during the whole Summer. The Lena basin is subject to frequent 80 m.p.h. gales and the average cloud is 7.5 tenths. There is always danger of sudden fogs.

Farther to the East the land becomes even more inhospitable. The ground is perpetually frozen, high mountains render flying extremely hazardous and snow lies for eight months of the year. The whole vast area can only be served by air or by steamer from Vladivostok along 10,000 miles of coast as far as the Kolyma River.

Nevertheless, the Russians have shown themselves capable of prodigious feats in road and aerodrome construction. Large numbers of workers can be settled in any area where development is required. Furthermore, it would be possible for such development to take place without the outside World having any idea it was even contemplated.

AMERICA AND THE FAR NORTH

Since the end of the War, the Americans have been acutely aware of the importance of the Far North. In co-operation with the Canadians a great deal of survey work has been done. Exercises "Musk-Ox," "Polar Bear," "Leming" and "Frigid Frost" are examples. Defences are being constructed in the Aleutians (to which Petropavlovsk base in Kamschatka is Russia's answer) and numerous airfields have been constructed in Alaska. A railway connects Anchorage on the South coast with Fairbanks, three hundred miles to the North, where Ladd Field is a major air base. The Navy has a 35,000 square mile oil reserve at Port Barrow.

The Alaskan Highway, built during the War over Canadian soil to enable supplies to be moved up to Alaska, is now being maintained with U.S. financial assistance.

It will be seen that whereas northern Russia and the northern coasts of the Western Hemisphere face each other over about 2,000 miles of frozen wastes, Alaska and North-East Russia are near neighbours.

Nevertheless, a country does not go to war without the ability to deal the enemy a mortal blow and, however efficient the weapons used, no mortal blow could be struck in areas so sparsely populated. It is true that vast deposits of minerals are known to exist on the northern verges of both continents, but they are so dispersed and undeveloped as not to be very vulnerable. Communications, except by air, could easily be made extremely difficult.

LONG RANGE WARFARE

It is necessary therefore to envisage a war at a range far exceeding anything previously known—warfare requiring weapons now only on the drawing board. Advanced airfields must be built, supplied and defended; probable enemy advance airfields must be taken into account, together with the possibility of capturing and using them. Even if aircraft existed with an effective range far exceeding that of the American B.29 (or its "atom" version, the B-50), vast distances over enemy territory would have to be covered to strike a vital blow. Such raids would be comparable with attacks on Germany from Newfoundland with Britain in enemy hands.

A more likely solution would be a guided atomic weapon which could be carried by aircraft across the polar region and then launched on its way. The enormous cost of one atom bomb and the vast damage it could do would, however, possibly be deemed to justify, if not a suicide weapon, at least a one-way trip of a piloted aircraft responsible for guiding the missile to its target. This would be comparable with the one-man submarines or the Italian "limpet-merchant."

The vast extent of their mineral resources, and their proved ability to transfer whole industries to less vulnerable areas, might give the Russians an advantage in this type of warfare.

From northern Greenland, Leningrad is only about 2,200 miles. Magneto-gorsk—the almost fabulous industrial city in the Urals where nearly two million tons of steel are produced every year and a great chemical industry has been established, is only 2,800 miles. In Russian hands, Greenland would threaten from less than 2,000 miles most of the great industrial areas of Canada and the United States, while trans-Atlantic traffic of all kinds would be exposed to attack. Many of the capitals of northern Europe also lie within 2,000 miles.

Alaska in Russian hands would threaten the whole West coast of Canada and the United States, and it must not be forgotten that this region is nearer to Russia than to the well-populated areas of those States. Incidentally, occupation of Alaska by an enemy would probably neutralize the only known deposits of uranium in the Far North, at Great Bear Lake.

The main difference between what might be called the Polar War and the late War would, of course, be the fact that the former would be principally an air war. There would be no question of victory through a preliminary air bombardment in support of advancing fleets and armies. Fleets would be used to capture islands or coastal air bases, armies to occupy and defend them, but the vast no-man's land would remain but a measure of the range and accuracy of aircraft and guided missiles and would be inhabited only by isolated meteorological stations and presumably by a series of Air Ice Rescue bases equipped with long-range helicopters.

To quote an American writer, the "Polar Concept" as it stands to-day is a good deal like the atom bomb which gives it a reality: it exists; it is replete with sensational possibilities; but beyond that everything is speculation.

EXERCISE "MUSK-OX"

By LIEUT.-COLONEL ANDREW CROFT, D.S.O.

On Wednesday, 8th October, 1947, at 3 p.m.

LIEUT.-GENERAL G. G. SIMONDS, C.B., in the Chair

THE CHAIRMAN: Colonel Croft is going to speak this afternoon on the subject of Exercise Musk-Ox. He had experience of Arctic exploration before the War. He also had experience in airborne operations and as a paratrooper. He was therefore eminently qualified to go out and take part in this Exercise, which was to study the use of equipment and air supplies for Arctic operations. He is a member of the Operational Research staff and is very shortly returning to Canada to continue the trial of this equipment, which is still in a state of development.

LECTURE

IN the first place, I should mention that any views I may express here this afternoon are unofficial.

To-day there is probably a greater interest in the Polar regions than ever before. Apart from other reasons, there is also an attempt by certain nations to consolidate territorial claims, since such claims legally are based on occupation rather than discovery. The Americans recognize no national rights nor sovereignty in the Antarctic. The recent United States Navy expedition was sent South to carry out research and to study cold weather conditions, and above all to train personnel in Polar technique in an area where national rights cannot so easily be infringed as elsewhere.

It seems that this type of Polar training and research will continue so long as there is misunderstanding and animosity between the Eastern and Western Powers, for the shortest distance between the two greatest World Powers to-day is across the Arctic and sub-Arctic regions. Although we do not expect a war, there is no doubt that, failing full international understanding, a war can best be avoided by being prepared. For this reason the United States and Canada, on behalf of the British Commonwealth of Nations, have been carrying out Arctic exercises and trials. Furthermore, both nations, as well as Great Britain, are experimenting with clothing and equipment, use of aircraft, tractors and so on. It is noteworthy that over fifty per cent. of Europe, Asia and North America is subject in varying degree to winter conditions similar to those found in Canada.

THE EXERCISE

Exercise Musk-Ox took place in Northern Canada between February and May, 1946. The object of this Canadian exercise, which was entirely non-tactical, was to study movement and maintenance of troops under cold weather conditions. It was my privilege to accompany the expedition as British Army observer. There were also five observers from the United States.

The exercise was carried out by a small force of about fifty men, carried in eleven Canadian armoured snowmobiles (i.e., special snow cars with caterpillar tracks) which towed sledges.

The Force started from Churchill,¹ on Hudson Bay; moved North-West to the Northern Canadian coast; crossed over the sea ice to Victoria Island and then

¹ Churchill is now the chief research station in the British Commonwealth of Nations for Arctic technique.



moved North to Denmark Bay. It next retraced its steps to the straits between Victoria Island and the mainland and moved in a westerly direction over the sea ice to Coppermine on the mainland coast. From there it went South-West to Fort Norman, and thence South to Fort Nelson on the Alaska Highway. The exercise was completed at Grande Prairie. The total distance covered was about 3,000 miles.

IMPORTANCE OF THE AIR SERVICE

The Force spent fifty days travelling and twenty-nine days halted. It was maintained by air from bases at Churchill and Norman Wells, both of which are near the northern part of the route, and from bases at Yellowknife, Fort Nelson and Edmonton, which are to the South. Supply was by parachute drops, landings on ice strips and by glider.² The value of the use of aircraft for supply and communication cannot be over-emphasized.

The aircraft employed were of three types—Dakota, Hadrian glider, and Norseman. The last-named is a magnificent all-round single-engined aircraft—fast, extremely reliable and very useful for emergency landings and evacuation of casualties.

During the first half of the journey the Force was operating over snow and ice in barren country and in conditions of extreme cold and strong winds. Subsequently

² The loss in the course of our air supply was only 3.9 per cent.

it encountered all phases of thaw conditions in the forest areas. During this period rivers were crossed by corduroying weak ice, by fording, bridging or by raft.

The route chosen was not mountainous. It had a maximum height of about 2,500 feet, but the terrain included sea ice, lake ice, river ice, glacier deposits, frozen tundra and gravel roads. Extreme Arctic conditions were encountered; but far more difficult, in my opinion, were the sub-Arctic conditions.

CLIMATE

Here I might mention that there are two distinct types of climate in the North of the World—dry cold and wet cold. An appreciation of this fact will, I hope, prevent a repetition of what occurred in 1940, when clothing and equipment designed for Finland was sent to Norway.

Wet cold conditions exist in Iceland, in the eastern and western coastal areas of Canada, and in northern Norway. There are four points about this wet cold:

(a) The climates are very unstable.

(b) The temperatures rarely descend below -20°F .

(c) Precipitation, and consequently snowfall, is considerable. Parts of British Columbia, for instance, have a snowfall of as much as 12 to 15 feet at one downfall.

(d) Rain and general dampness are more important factors to be considered than cold in the design of equipment and clothing.

Dry cold conditions exist in the continental areas of North Greenland, Canada, Russia and Finland. Exercise Musk-Ox was carried out in a dry cold area.

Northern Canada may be divided into two regions, the Arctic and sub-Arctic. Dry cold conditions exist in both areas. Their dividing line corresponds to the northern limit of forest—we may call this dividing line the tree line.

The Canadian Arctic, except for occasional clumps of dwarf willow, is treeless. Large areas are reasonably flat, to a certain extent boulder-strewn, with a covering in Winter of one to two feet of snow. The land is wind-swept. Snowdrifts vary from a few inches to several feet in height. Innumerable frozen waterways and lakes provide fast travel and natural landing places for gliders and aircraft. Temperatures drop to -50°F or occasionally lower. Gales up to 40 miles an hour are frequent. The combination of low temperature with high wind produces severe wind-chill, which has an effect on personnel and equipment. The blowing snow is comparable to desert sand. This sometimes reduces visibility to a few feet, and its power of penetrating the smallest openings is unbelievable.

The Canadian sub-Arctic, i.e., South of the tree line, consists largely of bush forest and waterways. During the Winter, temperatures are often just as low as in the Arctic, but owing to the absence of wind conditions are much warmer. The snow is soft and about two to four feet deep.

In Summer the Arctic can be very warm. Temperatures occasionally rise to as high as $+90^{\circ}\text{F}$. Traction is then more difficult, and very limited use can be made of wheeled vehicles. By late July the sea has become relatively clear of ice except in the Far North and in certain areas among the Arctic islands.

MILITARY EQUIPMENT

Given suitable equipment, warfare in the Arctic can be just as practicable as desert warfare and in many ways similar to it. On the other hand, the best analogy to the sub-Arctic is jungle warfare with its mosquitoes.

In summarizing the effect of climate on military equipment in general, I would lay stress on the following points:—

- (1) Tracked vehicles are required which are rugged and have a good ground clearance and a low ground pressure.
- (2) Mobility is more important than fire power. There is an urgent requirement for an air-cooled medium machine gun and also a light-weight, self-loading rifle which is effective up to 300 yards and will use light-weight ammunition.
- (3) High stress metals such as towing eyes become brittle in extreme cold.
- (4) Differential contraction of dissimilar metals, such as steel and brass, cause equipment in cold weather to become either stiff in operation or unusable.
- (5) In field firing, targets quickly become obscured in cold weather, as a fog forms like a blanket over any heat or moisture-producing agent. This is caused by the freezing of minute particles of water into ice. The Americans consider that this is aggravated by the oxidization of organic materials in gun-powder.
- (6) Lubrication is vital. All old greases and oils must be cleaned out before cold weather lubricants are applied.

VALUE OF THE EXERCISE

Exercise Musk-Ox was undoubtedly instructive. It demonstrated that a small mechanized force of oversnow vehicles, *dependent on air-borne supplies*, could operate over a wide diversity of terrain. It indicated that such vehicles, when suitably improved, can be used not only for defence purposes, but also for helping to open up Canada's vast northern territories.

The points I have mentioned above mainly affect the Army, but I think that the slides I am now going to show you will emphasize the all-important necessity of air support and co-operation.

REPLIES TO QUESTIONS

A series of interesting lantern slides were then shown, and subsequently a 16 mm. Kodachrome film. In the course of his commentary on the slides and film, and in reply to questions later, the Lecturer touched upon various other points of interest.

Sickness.—One man suffered from bad burns, and another fell under a heavy sledge sustaining a knee injury. There was only one case of frostbite.

Clothing.—The men were issued with Royal Canadian Air Force clothing, which proved bulky and rather unsuitable; many of the personnel obtained Eskimo fur clothing.

The Americans brought a certain amount of clothing to experiment with. This was tried out, and several alterations would be suggested. It was then sent to Washington by air and returned within a fortnight with the alterations duly made. Thus continued progress on clothing was carried out during the Exercise.

Since the middle of the last century little progress has been made in the design and manufacture of Arctic clothing, until recently. In fact, much of the information and experience gained during the Franklin search expeditions was subsequently forgotten and only brought to light in this century by the renewed interest in polar exploration and research.

Arctic clothing consists of layers of light-weight garments which provide the necessary insulation, and an outer smock and trousers of windproof material. In extreme cold it is all-important to retain as even a temperature as possible and not to become unduly overheated. Clothing should therefore be designed so that there is ample adjustment for ventilation purposes at the neck and waist.

The smock is at present being fitted with a deep hood extending about three inches beyond the cheeks, the outer rim being stiffened by the insertion of malleable copper wire. This wire can be bent into any shape or position to obtain maximum protection against the wind.

Inner smocks are being made of double wool pile or fibre-glass materials. Like the windproof smocks, they are loose fitting, and are either provided with a full-length front-zipper opening or are designed to be pulled on over the head.

The British experimental under-trousers, which will be on trial at Churchill this Winter, are made of fleece material and fitted with a zip down the whole length of each side. The zips ensure that these trousers can be put on or removed when necessary without loss of time.

There are three principal types of footgear. A knee-high canvas *mukluk*, fitted with a rubber golosh-shaped foot, and worn in combination with suitable duffel and woollen socks, is satisfactory for dry cold. For wet cold conditions the Canadian *shoepac* has proved satisfactory; this is a knee-high, lacing type of boot which, if well made and cared for, is waterproof. The third type of footgear—a boot suitable for marching, ski-ing and climbing—is still under development.

Vehicle Tracks.—The 3-foot wide tracks, made of rubberized canvas material and fitted with steel cross links, performed satisfactorily. Certain tracks were not changed throughout the journey. Trouble was experienced with sledge runners, but not with the tracks.

Towing.—An ordinary towing eye was used by each vehicle. Future oversnow vehicles will, it is understood, be fitted with a type of automatic windlass.

North-East Passage.—A question was raised about the North-East Passage, to which the Lecturer replied that the Russians have already opened up their North-East Passage. He had no statistics about this Passage during the recent war; but before the war, from 1932 onwards, the Russians began to use the Passage successfully; the Summer of 1936, for instance, was a particularly good season. The navigation of the route was assisted by the use of meteorological stations, air reconnaissance and, above all, by powerful ice-breakers.

THE CHAIRMAN

Until about 1940 there had been very little to show in the way of development in cold weather equipment; barring some very elementary experiments on some clothing, there had been practically nothing done towards the development of equipment prior to the War, to carry out a trip of this kind of which you have just seen pictures.

Then the invasion of Norway, and the prospect in 1940 of carrying out an operation there, gave a stimulus to the development of Arctic equipment. I had something to do, at various times during the War, with the planning of proposed operations in Norway, and had the opportunity then of following fairly closely these developments. By the end of the War, there had been very considerable research done in Canada on the trials of these various equipments, and it was decided at the end of the War, to carry out this Exercise "Musk-Ox," in order to give a fairly extensive operational trial to the vehicles already developed.

Before the War the Arctic regions had been regarded as frontiers and protective barriers to the countries which they bordered, but the modern development of air transport has completely changed that situation, and they are now as readily crossed as any country and any form of territory in the World. Continual research and development of equipment capable of operating in Arctic conditions is, therefore, more important now than at any time, and it is not intended to leave development where it had reached when the War came.

As I mentioned at the beginning, Colonel Croft is shortly going back to Canada to continue work on this development.

On behalf of all of us here this afternoon I would like to thank him very much indeed for the lucid description he has given of the Exercise and the principal lessons that were learned from it. (*Applause.*)

MAJOR-GENERAL J. C. O. MARRIOTT: On your behalf I would like to thank General Simonds for taking the Chair this afternoon. I feel it is most appropriate that we should have a distinguished officer from the Canadian Army officiating at this particular lecture. (*Applause.*)

See article on "The Strategic Aspect of the Arctic," p. 520 of this JOURNAL.—Editor.

RAIDS IN THE LATE WAR AND THEIR LESSONS

By MAJOR-GENERAL R. E. LAYCOCK, C.B., D.S.O.

On Wednesday, 15th October, 1947, at 3 p.m.

VICE-ADMIRAL SIR PHILIP L. VIAN, K.C.B., K.B.E., D.S.O.,
in the Chair

THE CHAIRMAN : I think we may well offer our warm congratulations to the Council of the Royal United Service Institution in having obtained, to give us this lecture, the services of Major-General Robert Laycock.

He is the Commando-Raider concept personified. He was from the beginning in the movement, and it was under his leadership and by his Force, which was named after him, that there was carried out that most difficult of all operations—the cover for the evacuation of Crete. He was personally responsible for the most famous raid of all, the Rommel raid. Afterwards he led the boats in command of his Commandos when we invaded Sicily—the spearhead of the assault; and again at Salerno. It was only then that his active career was interrupted by the Prime Minister, Mr. Churchill, who decided (probably rightly) that he *would* have General Laycock, junior and young as he was, for a very important, a most important task: to relieve Lord Louis Mountbatten as Chief of Combined Operations, late in 1943.

As I understand it, the Commandos differ from other units in that there must be exercised the highest degree of imagination in their training, which must be carried out at an intensity to which few other units have to submit. Above all, the Commandos depend for success in the always hazardous operations they are called upon to carry out on the personal qualities of their leader who, although frequently a senior officer, goes ashore with his sword in his mouth in the first boat and personally leads the foray which follows.

It is these qualities which have brought fame to your Lecturer to-day, and I can conceive of no greater nor higher authority to address us on Raids than General Laycock, both for his active experience in 1943 and for his chieftainship in the office of Combined Operations until a short time ago.

LECTURE

THE subject of my talk to you this afternoon is the raiding operations of the late war, and the lessons which we learned from them. By raids, of course, I mean those connected with Combined Operations (either seaborne, airborne or overland) and not those of vastly greater scope and importance, the tremendous strategic bombing operations which were carried out by the R.A.F. and the U.S. Air Forces. The raids to which I am going to refer might perhaps be defined as those in which the attack on the actual objective was invariably made by the soldier on his flat feet, although he might have been carried to and from the scene of operations, or at least part of the way there and back in ships, surface craft, submarines, aircraft or Army vehicles. In the late war, of course the great majority of our raids were seaborne, and the Royal Navy took us there and back with, of course—a *sine qua non*—the associated air support provided by the R.A.F.

I think one aspect of the raid proper, as opposed to normal operations, is that it implies what one might call "smash and grab" tactics, as compared to sustained action, and although, especially towards the end of the War, raiding troops, having completed their original tasks—say the elimination of a coast defence battery as at Salerno—were given subsequent tasks inland, one normally expected that a raid would imply a withdrawal, either when the objective had been dealt with or, a less

satisfactory procedure very often, to a timed programme. So really, when you think of a raid, you have to think also of the implication of a withdrawal.

SPECIALIZED UNITS

As far as the actual soldiering side is concerned—and I am afraid I am going to restrict my remarks this afternoon rather to the soldiering side—raids were normally carried out by troops specially trained and rehearsed in raiding operations, and the largest body of such troops was originally known as the Special Service Brigade and later as the Commando Group.

There were, however, also a vast number of other smaller bodies of specialized troops. There were :—

- the Special Boat Section,
- the Special Raiding Squadron,
- the Small Scale Raiding Force,
- the No. 30 Assault Unit,
- the Royal Marine Boom Patrol Detachment,
- the Mountain Warfare Commando,
- the Underwater Swimming Unit, and
- Combined Operations Pilotage Parties, not to mention larger formations, such as
- the Long Range Desert Group,
- the Long Range Penetration Groups, and
- the Special Air Service Regiments.

That is by no means a comprehensive list.

I think perhaps here we come to our first lesson ; but let me say straight away that the last thing I wish to do is to give the impression that I want to criticise any of the units which I have mentioned. I actually knew and came into contact with all of them except General Wingate's Long Range Penetration Groups, and I have the highest opinion of the efficiency and bravery with which they carried out their tasks. But this I would say : they were frequently carrying out tasks which one of the other units could quite easily have accomplished, possibly with a little extra training—and there is always time to train in war, though, strangely enough, apparently there is never enough time to train in peace.

I think the lesson is really that one must beware of the growth of " Private Armies." They spring up like weeds. Rival units are set up in different theatres, and even at home under different organizations and commands. Co-ordination is lacking, with a resultant waste in the design and production of equipment and, worst of all, in our precious manpower. I do not mean that specialists are not required in war—of course they are, and no modern army can function properly without them. You would never dream of asking a Sapper to do a Gunner's job, or *vice versa*, nor would you ask an engine-room artificer to take over the business of a yeoman of signals—that goes without saying—though it is perhaps open to argument as to whether or not you want specialists for raiding. I personally think you do, and I have never been one of those who subscribed to the theory that it was a waste of time to train Commandos because an infantry battalion could do the job just as well ; it could not, or at least it ought not to be able to, because if it could, you might be well assured that it must have been neglecting its own infantry training in favour of commando training, with the inevitable result that it would not be able to pull its weight in its own infantry role.

Certainly if you take the normal training programme of an infantry battalion, put your pencil through half of it at least, substitute night work for what you have crossed out, ruthlessly weed out anyone (even your best officers and N.C.O's) who cannot get more than three out of five in night vision tests (and you will find there are a lot of them), weed out anyone who has not got a good head for heights and a natural aptitude for climbing, get rid of the chap who might be a first-class soldier but a damn bad sailor, sack the man who is a good plodder but won't do anything unless he is told to, and then play havoc with its War Establishment and with its G.1098 Stores, and when you have finished, form the whole lot up, tell them they are in a Commando unit and ask if any man would rather transfer back to an ordinary Regular unit, and if he says "Yes," let him go—then, certainly, although you started with an infantry Battalion, you have fetched up with a Commando, but don't imagine that you have still got an infantry Battalion capable of doing an infantry Battalion's job, because you have not. You have lost most of your transport, a great deal of your fire power, and nearly half your strength, but you have got a unit which, though it would probably make a poor showing compared to an infantry Battalion in a defensive position, would possibly end up in much better shape if it were told to make a longish passage in a heavy swell in a landing craft, and climb an 80 feet cliff in the dark at the end of it. Here I might say in parenthesis that it is perhaps typical of the vicissitudes of war that the first time I found myself in command of three such units in action (and in those days we only had two Bren guns per Commando) I was ordered to produce a rearguard to an infantry Brigade.

In my humble opinion, then, the answer to the question as to whether or not you require "specialist" troops for raiding is "Yes." But the lesson is: don't raise too many; don't form odd units for odd jobs, because if they are worth their salt, they ought to be quite capable of carrying out any particular type of raid. Furthermore, in order to economise in effort, manpower, and equipment, make one centralized headquarters, on the highest level, responsible for co-ordinating the organization, doctrine, training and technique, and the equipment of all raiding forces. If you agree with that, I think you may possibly also agree that the obvious headquarters to take on that business, taking into consideration the essential inter-Service aspect of the raid, is Combined Operations Headquarters as at present organized.

You have got your Commandos to-day in your peace-time set-up. They are found by the Royal Marines—a Corps whose tremendous traditions and history (including that of the late war) fits them most admirably to that task. If the Army could find a Commando unit or two to "gang up" with them, so much the better, because 100 per cent. co-operation is essential. But I don't believe you want any other raiding units. I think the Commandos could be trained to do the business of all the units which I mentioned earlier (with the possible exception of the Combined Operations Pilotage Parties); *but*, and this is of paramount importance for Commando Troops, those troops must have the absolute confidence of the Army, for whom and with whom they will frequently be operating. As Royal Marines they are permanently linked up with the Admiralty, and I do not think we need worry on that score, but the firmer the links are forged in the future between them and the Army—and to a certain extent with the Royal Air Force—so much the better and, incidentally (though I know I am now talking out of turn) only thus shall we be able to ensure the correct *per mare, per terram* balance of that historic corps which I am certain is in the national interest.

Now I will turn to the various types of raids which were undertaken in the late

war. Naturally, I cannot make an exhaustive analysis but, very roughly, I think we may divide raids into four main categories :—

1. Reconnaissance raids.
2. Raids in direct or indirect support of larger operations, including diversions and deceptions, by attacks on isolated targets or on the flanks or rear of the enemy.
3. Harassing raids ; and
4. Sabotage raids.

RECONNAISSANCE RAIDS

Take reconnaissance raids first : by these I mean raids which were mounted with the object of implementing intelligence from normal sources, such as aerial photographic reconnaissance, by ascertaining the exact nature and location of enemy defences, by the capture of prisoners to confirm or otherwise the enemy order of battle (so dear to the heart of the Intelligence Staff Officers) or by obtaining information about beach gradients, beach exits or the nature and depth of soil on enemy beaches.

Quite a good example, I think, of this type of raid can be found from those mounted to reconnoitre the obstacles on the French coast prior to D-Day. You will all remember that when the Germans considered our invasion of France was a certainty, they started putting up various types of beach obstacles. This was tiresome, but it did not worry us unduly, because we had expected it, and had worked out a technique for dealing with it. But what did worry us was one morning when a P.R. Pilot returned after flying very low over the beaches and when his films were developed they revealed mines made fast to the tops of the obstacles. Well that was all right, but we had to know what type of mines they were, so that we could deal with them—and that the photographs would not tell us. Small raids were therefore mounted to obtain the requisite information. Parties of perhaps one or two officers and ten to a dozen men were sailed from England in motor torpedo boats. About three miles off the enemy coast they transferred to 18 ft. powered boats known as Dories, and in these they approached as near as they dared to the shore. They then transferred again into rubber dinghies in which they paddled to the beach and landed. It was all a very tricky business because, of course, by this time, the Germans were very sensitive about their defences, and sentries were posted all along the coast. When, however, a suitable obstacle was found with a mine attached to the top, the No. 1 of the party got to work on it. His job was comparatively simple ; he photographed it with a special infra-red camera capable of taking photographs in the dark. As soon as he was satisfied that he had got a nice studio portrait he and his camera were shipped back to the motor torpedo boat.

No. 2 of the party then tested to see whether the mine was magnetic. This he did with a long stout line with a powerful magnet attached to one end. He took the leading end of this line, walked up to the obstacle, passed it round the post and walked off at right angles, thus drawing the magnet up to the obstacle. When nothing happened, it was obvious it was not a magnetic mine. That information was also passed back to the M.T.B.

The next thing to do was to find out whether the mines were booby-trapped and would go off when tampered with later on by the gentleman whose business it would be in the invasion to get rid of them. The original party was not quite sure how to test for this, but the problem was solved by a resolute Sapper officer who, with the aid of a special step ladder, climbed up to the mine preparatory to

fiddling with it, when he slipped and fell. The step-ladder collapsed and he found himself, to his horror, swinging from the mine. It didn't go off, and was, therefore, presumed not to be a booby-trap. The Sapper got an M.C. for his trouble and was highly delighted.

Luckily, when several mines had been looked at, the experts who had been taken with the party and who knew a great deal about mines, came to the conclusion that they were definitely only ordinary teller mines, and this saved the frightful business of any further tests. It was only then necessary to send over parties from time to time to confirm that no new types of mines were being used.

I think perhaps one of the most remarkable features of these raids was the almost unbelievable lack of alertness on the part of the German sentries. As an example of what I mean, there was an occasion when one of our men found himself confronting a German at about five yards range. Expecting to be challenged, he stood stock still and very gingerly drew his revolver and pointed it towards the sentry. He was just about to fire when, to his amazement, the German produced a cigarette, lit it, and walked off smoking, much to the relief of the Commando soldier.

PLANNING AND REHEARSALS

Be that as it may, clearly to undertake a raid of this type, or indeed, practically any type, with any hope of success, involves the most intricate detailed planning and rehearsal. Every single man taking part must know exactly what he is going to find when he gets to his objective, and if everything goes right he knows where he is to within a few yards, and he can find his way about in the dark. Almost he gets that strange feeling that one sometimes has in dreams, that you are in a completely strange place and yet you realise that you have been there before. That, of course, is because he has been rehearsing *ad nauseam* with the whole detachment on full-scale models.

But here, I think, we come to our second lesson: I would call it the necessity for, but also the dangers of intricate planning and rehearsals. I think the necessity is obvious. The more thorough the planning and rehearsals, the more likely is the raid to succeed. But there are also dangers, and they are two-fold. One is connected with the troops taking part, and the other with the Staff Officers and Commanders concerned. Take the latter first: there is, I think, a danger of getting too "raid-minded," of getting so saturated in planning to the minutest detail that it becomes almost a fetish, so that to the officer affected it later seems almost criminal to commit troops to battle without this intricate planning. I know of several cases of really first-class senior officers who were so steeped in raid planning that, later on, when they rejoined field units and found themselves confronted with a fluid situation in the ordinary battle, they were quite incapable of making a snap plan, of giving out brief verbal orders when the situation called for it, and so perhaps failing to seize some fleeting opportunity, with the inevitable result that they soon found themselves posted back to the office stool as planners.

So the lesson is, if you ever get involved in planning raids (even large scale raids), don't forget that the luxury of planning to intricate details is by no means always possible in war, and don't later (just because you have been used to it) let it prejudice that essential quality of every good soldier of being able to take the current-when it serves.

The other danger, as I said, concerns the commander and troops taking part in a raid. In such operations, when things go right, they seem to go very right, every detail works out according to plan, and each man feels that he is part of a very well ordered machine. An example of what I mean is provided by No. 4 Commando's attack on the battery at Varangeville on the flank of the Dieppe raid. The whole business went like clockwork. If you want to read about it there is a detailed description in a War Office publication, entitled "Notes from Theatres of War, No. 4 Commando's Attack on the Battery at Varangeville."

That, however, does not always happen, and in a raid, if things can go right on occasion, on others they can go very, very wrong, so wrong that all your precious detailed planning and rehearsals might just as well never have taken place. My point is this: it is absolutely essential that all ranks from the highest to the lowest who take part in raiding operations must always be ready for the unexpected; they must never take it for granted that things will go right, and they must *never* be allowed to chuck their hands in when things start going wrong. Flexibility of mind and action must be the watchword. They all know what the object of the raid is and somehow or another they must see that it is attained. It is usually quite obvious when things do go wrong, and then it is useless to try to stick to the original plan. Take, for instance, the case of a 3-in. mortar detachment being landed from a landing craft to support a party being landed from another landing craft. If the mortar detachment gets ashore all right but sees the other landing craft sunk in front of their eyes, it is no good sitting about on the beach wondering what to do next. They know the plan, and they must go off and support someone else—and the quicker the better.

SUPPORTING RAIDS

I always think rather a good example of improvisation and initiative was provided by the action of a Detachment of No. 3 Commando, also on the Dieppe raid, but on the opposite flank to the Varangeville Battery which I have already mentioned. This also serves as an example of another type of raid (the second of the four which I mentioned in my original classification)—a raid which is mounted in support of a larger operation, either indirectly, at some distance from the main objective, and possibly well before it in time, for deception purposes (like the bogus reconnaissances which we carried out in the Pas-de-Calais well before D-Day), or directly in support in the form of diversions (possibly to the flank or in the rear of the enemy) or attacks on isolated targets with which the main body does not wish to become involved.

In the case of the Dieppe Operation, it was the last of these roles in which the Commandos were employed. You will remember that the Canadian Division attacked in the area of Dieppe itself, but there were two Coast Defence Batteries on the flanks, one to the North-East and the other to the South-West, and it was essential that they should be silenced, since they might otherwise have played havoc with our shipping off the main beaches. No. 4 Commando was allotted the S.W. Battery at Varangeville and No. 3 Commando the N.E. Battery at Berneval.

As I told you, No. 4 Commando's operation was a model raid. The landing craft flotilla beached in perfect formation in exactly the right spot at exactly the right time. No. 4 Commando's scaling of the cliff went according to plan. The support fire was accurate and effective, and the assault went in with real drive. The battery commander and his entire battery were killed, with the exception of the four men who were taken prisoners. The ammunition was blown up, and the guns rendered useless. No. 4 Commando suffered very few casualties, the re-embarkation went

like clockwork and the party sailed back to England. The whole business was just what an operation ought to be, in every detail, including the winning of the Victoria Cross by one of the officers.

Not so with No. 3 Commando. Almost from the start everything went wrong. The first thing that happened was that by ill-luck the landing craft flotilla ran foul of a heavily escorted German convoy which happened to be sailing South that night. The escorts shot the hell out of our landing craft and although the naval officer in command of the party very gallantly attempted to stand on his course and speed, the flotilla got hopelessly adrift in the dark. Some landing craft were sunk, others were disabled, and there were many casualties among the soldiers, some of whom were swimming about helplessly in the dark. Five of the R boats beached about two miles from the correct beach and I believe the soldiers fought quite a spirited little battle on their own, but they never re-embarked nor did they get anywhere near the objective.

One landing craft, however, beached nearly in the right place, and it contained a strange party, including the Second-in-Command and some of the headquarters staff. The whole detachment totalled three officers and seventeen other ranks. They had one Garrand rifle, nine service rifles, one Bren gun and six Tommy guns between them. Two of the men were runners, two were signalmen with no one to signal to, and four were spare men from a Mortar Detachment. But, this is the point: those three officers and seventeen men managed to do the job. Their task was to stop the Coastal Defence guns firing at our shipping, and none of those whacking great guns ever fired anywhere near our ships until the main operation was over and our ships were at extreme range or out of range.

I sometimes feel that the German battery commander concerned must have been a fairly poor type. Anyway, he fell for the old ruse of a handful of men pretending to be a great many. A party of three officers and seventeen other ranks isn't very large for an attack on a battery manned by 200 all ranks, but they managed to scale the cliff and to get well inland in the rear of the battery without being seen. Then, by dashing about and shouting bogus orders, and showing themselves in different places, they succeeded in completely shaking the confidence of the battery commander, who obviously thought he was being attacked by at least a Commando 350 strong. He was shot at from both flanks, he was shot at from the rear, he was shot at from the top of a neighbouring church tower and from the nearby cornfields, and he lost his head sufficiently to traverse his guns round and shoot at the soldiers on the shore instead of at the ships at sea.

However, only one of our party actually got killed, and he was blown up on a mine on the way back to the cliff at the bottom of which the remainder successfully re-embarked. This they did when the main operation was over, and they had done the job which 350 men had set out to do. So successfully had they done it that Captain Hughes Hallet—the Naval Force Commander, gave it as his opinion that the action of this small detachment was one of the outstanding features of the whole operation.

● INITIATIVE AND IMPROVISATION

And so we learn lesson No. 3—the paramount importance of initiative and the ability to improvise when the plan breaks down.

We spent a good deal of time and trouble in the Commandos trying to instil initiative into the private soldier, and very often we found that the Regular soldier

was the most difficult to teach. One of our methods made some of the more stereotyped officers hold up their hands in horror, but it worked: we refused to allow the men to live in barracks, but gave each an allowance of 6s. 8d. a day to feed and house himself, and to find transport to and from the places of parade but of course he could walk or bicycle if he liked. All we used to say was: "Parade to-morrow is at such and such a cross-roads, or in the Market Square at so-and-so, and the time is 0730 hours." If any man turned up at 0731 and said he thought a bus ran that way but was mistaken, or said that his landlady hadn't got his breakfast in time or made one of a thousand other excuses, we told him he was the sort of chap who wanted at least an Orderly Corporal, a C.Q.M.S. and a Drill Sergeant to get him up, give him his breakfast and get him on parade and we sent him packing back to his old unit.

I know all soldiers can't live out of barracks, but it has a certain amount to be said for it. It does not (as many said it would), impair discipline in any way; in fact, if anything, it enhances self-discipline. The ordered routine of barrack life when you parade for everything on a bugle-call certainly does nothing to foster initiative, and perhaps even tends to stifle it. I can well remember how amazed I was on the last day of the Battle of Crete when a regular soldier—not, I may say, in the Commandos—came up to me and said he was starving and could I give him something to eat, because the ration had only been half a biscuit and one-eighth of a tin of bully beef per man for the last three days. I turned round to my batman, Corporal Cook, of the R.H. Guards (he isn't really a Corporal, but for some reason he became known as one and wore two stripes and a crown in the manner of the Household Cavalry), and I said, "Corporal Cook, what have you got for my dinner?" on which he sprang smartly to attention and replied "I have two roast fowls and a sucking pig, Sir." Well, he didn't learn to produce meals like that on the barrack square. There was no earthly reason why the other man should not have found for himself as well, but living in barracks he had been used to being provided for.

But to return to Dieppe. I think there is yet another lesson to be learnt from the action of the Commandos on that day. I am absolutely certain that No. 4 Commando would never have had the success they had, nor would the small party of No. 3 Commando have been able to hoodwink the German battery commander had they not both, so to speak, materialised as if by magic from a quarter from which the enemy knew perfectly well they couldn't possibly come; because if you go and look at the cliffs below Varangeville and Berneval, it wouldn't enter your head that soldiers could climb up them.

This lesson is, then, for raiding purposes try and perfect a technique which will enable you to use ground which looks impassable. Good beaches are nearly always mined, bad beaches never; all right, practice rocky landing technique. Good landing grounds are defended by flak, bad ones are not, and I am sure that there is great scope for the parachutist who can learn to drop on broken ground or in wooded country. Incidentally, in passing, I might say that there was one element with which we had no success at all, and that was mud. Anyone who can evolve a way of putting in an assault successfully over mud is going to catch the enemy napping, but if any of you can think of a way of doing it, we couldn't.

HARASSING RAIDS

And now let us pass on to the third type of raid I mentioned—the harassing raid. This type of raid is mounted with the object of playing on the enemy's nerves. It is carried out by really small parties—generally one officer and five other ranks—and I think it nearly always paid a dividend out of all proportion to the effort put into it.

It makes the enemy "windy" behind his own lines, it makes him apprehensive of his lines of communication, his senior officers don't sleep easily in their beds, with the result that the enemy starts employing hundreds of men for static and security guards in back areas, who would otherwise be sent to reinforce the fighting troops.

I think perhaps some of the best raids of this type were carried out by the forerunners of the S.A.S. Regiments—a fairly small detachment of M.E. Commandos then known under a cover name as the 7th Special Air Service Brigade and commanded by a really remarkable young officer whose theory it was that if you did something completely unexpected—like walking into a German Air Force Mess some 300 miles behind the lines and shooting up the diners—you would nearly always get away with it.

They spent a long time in enemy territory and played havoc on his lines of communication in the Western Desert. On one raid, if I remember aright, they lay up behind the lines for about three weeks, and blew up sections of the only existing railway line on twelve separate occasions, which must have caused considerable annoyance if nothing else.

Perhaps one of the most interesting aspects of those five or six men raids was the ingenuity displayed by the detachments in getting to their objectives through the inner enemy defences. Their pet trick with road blocks was to hide their jeeps (their usual mode of conveyance) near the road in the dusk and wait for an enemy convoy to come along. When it arrived they fell in astern of it and motored serenely through.

On one memorable occasion, when they found an alert Italian sentry on a road block just outside Benghazi—then some 300 miles behind the lines—one of the officers, who was a brilliant linguist, marched up to the man and, speaking in Italian with a German accent, said he was a German Staff Officer dressed up to test security schemes. He had the whole guard paraded, gave them a long lecture on security, while the remainder of his detachment marched through the road block in a formed body.

If there is a lesson to learn here, I think it is that an extended theatre of operation gives tremendous scope to small units composed of men who love adventure, and who can keep their wits about them in a tight spot. That happens to be, thank goodness, one of the natural characteristics of many Englishmen. I don't believe we made nearly enough of it in the late war. I think that very senior officers of the more rigid type who, to give them their due, had their hands too full trying to fight a nice tidy battle with regular formations, failed to realise what a really high dividend could have been paid if units like this 7th S.A.S. Brigade had been given fuller employment. They should have been taken more in the confidence of Army and Corps Commanders and, in conjunction with the General Operations and Intelligence Staffs, should have been given a freer hand to carry out schemes of their own volition, scatterbrained as they might have seemed at first sight.

THE SABOTAGE RAID

That brings me to the last type of raid which I mentioned in my classification—the sabotage raid.

These raids were mounted with the object of striking at the enemy's industrial war effort, and aimed at the destruction of vital plant or machinery which did not present a very satisfactory target for our bombers.

The famous raid at St. Nazaire was quite a good example when, as you will remember, the lock gates of one of the only docks which could take the battleship "Tirpitz," was destroyed. It is true that a very large proportion of those who took part in the operation became casualties, but the price was small for the results achieved.

Another very successful raid of this type, though on a much smaller scale, was that carried out at Glomfjord, in Norway. Here two officers and eight other ranks of No. 2 Commando landed from a Free French submarine. The objective was a factory connected with the production of aluminium, which was vital to the *Luftwaffe*. The submarine surfaced on a dark night about half a mile off shore, and the men succeeded in paddling ashore in rubber dinghies, unseen. A three-days march brought them to the vicinity of the factory, where they lay up for a further two days learning the lie of the land and watching the conduct of the guards. On the sixth night they attacked. They had two strings to their bow. One was to place charges on the armatures of the three generators in the power house which fed the factory, and the other was to blow the Penstocks—the great pipes which supplied the water power from the mountain. The first effort in the power house was not wholly successful, because only two of the three charges were blown successfully—and no one ever found out what exact damage was done, but that did not matter because the party, having succeeded in withdrawing from the power house with only one killed, climbed the mountain at the back of the factory and placed their charges on the penstocks. The result was terrific. When the charges were blown the resultant rush of water and rock down the mountainside almost completely flattened the power house and rendered the factory useless. I believe that several million pounds worth of damage was done in a few minutes.

Again, unfortunately, casualties were very high, but so, proportionately, was the dividend paid. You see, there were only ten all ranks employed in that operation. One man was killed, two were captured, one was wounded, four managed to escape into Sweden and so back to England by devious routes. The two officers remained at large for some time, but were eventually rounded up, put in chains, and though the whole party was wearing uniform and the operation was a perfectly legitimate operation of war, on Hitler's express orders they were handed over as saboteurs to the Gestapo in Berlin, where they were tortured and shot.

So much for the four main types of raid. There were, of course, raids which were a combination of two or three of those types all rolled into one, of which the splendid and truly Combined Operations raid at Bruneval, carried out by the troops of the Airborne Division, is an excellent example. There the men were landed by the R.A.F., operated as soldiers and were brought back to this country by the Royal Navy. It was a mixture of a Harassing raid, a Sabotage raid, and a Reconnaissance raid: Harassing because they attacked static troops who did not expect to be attacked at all; Sabotage because they destroyed an R.D.F. station; and Reconnaissance because they brought back with them to this country some technical R.D.F. equipment which we were particularly anxious to know about.

I have touched on a few lessons, but there are, of course, many more which I haven't time to discuss such as:—

The value of training in darkness;

The effect on morale of inevitable cancellation and trying to keep men on the top line for long periods;

The value of industrial training for saboteurs;

The development of infra-red equipment, and of the technique of picking men off the ground (the opposite of parachuting) as a means of evacuating saboteurs and many others besides.

THE FUTURE

I had also meant to touch on the future, but I am not going to for three very good reasons ; first, I have talked far too long already ; the second is that those who prophesy nearly always make fools of themselves ; and the last is that, if any of us have any bright ideas about raiding in the future, we had far better pass them on through Service channels than talk about them in an open discussion of this nature.

All I would say is this : in the coming age of B.W. and atomic horrors and what not and so forth, where you have widely dispersed and carefully concealed factories, installations, and stocks of raw materials and finished articles, which are vital to the enemy, then surely there must be terrific scope for long range reconnaissance and sabotage raids carried out by small bodies of adventurous young Englishmen.

I do suggest, in conclusion, that the development of the technique necessary to carry out that sort of raid ought now to be regarded as one of the top priority commitments in the training programme of our Commando Brigade.

DISCUSSION

VICE-ADMIRAL C. V. USBORNE : I would like to ask the Lecturer if there are any examples of German raids which are at all comparable with our own.

THE LECTURER : There was one absolutely splendid raid carried out by the Germans from the Channel Islands, which was almost one hundred per cent. successful. As far as I know it is the only example of that type of raid.

I can't think why the Germans did not try more, but it doesn't seem to have been in their normal idea of making war.

This one was the only one of its kind I know of, and we were rather jealous of it : it went very well indeed.

Of course, there were also the very small scale raids carried out by the Italian saboteurs in the Mediterranean theatre, but they were nearly always rounded up before they had done much harm.

CAPTAIN E. ALTHAM, R.N. : The Lecturer advocated selecting difficult ground for a landing, but said that no satisfactory means had yet been found of traversing mud. I wonder whether the conditions of mud are somewhat similar to those of quicksands.

Those who have been there will remember that at St. Malo there is a vast expanse of quicksand, and they sell there picture post-cards of a gentleman sinking in it in great agony ; but the local beachcombers have a method of traversing the quicksands on a sort of ski. I wonder whether anything of the kind has been tried for getting across mud?

The other question I would like the General to give us a line on, particularly from the soldier's point of view, is : were the amenities of the landing craft—the conditions on board while they were embarked, all that they might reasonably be for a well-prepared raiding flotilla ? One does know that, for instance on D-Day, the soldiers had to stay on board very much longer than was ever intended, owing to conditions of weather ; but that situation might arise again and again, and there is no doubt they did have a pretty bad time, and suffered a good deal from seasickness, cramp, foul air, and so on. Many years ago now, we were going to do a landing on the Belgian Coast from the big monitors—I think the force ran to three mixed brigades. They certainly would have been much more comfortable on board those roomy ships, and in far better condition when landed, than they could have been after knocking about for many long hours, if not days, in the small landing craft.

While on this subject, I have just run across a report that the Americans are to fit out experimentally large submarines to hold a hundred men each, and to be capable

of transporting them under water for up to 3,000 miles. This is particularly for Polar operations, but perhaps the submarine, if thoroughly equipped, has something to commend itself as being a more comfortable method of travelling under water than the surface landing craft, especially in bad weather, though neither, doubtless, can compare with being transported by air.

THE LECTURER: With regard to the first question, we did have experiments to try and get men and vehicles across mud, but I think probably we wasted our time. The equipment produced was too heavy and too bulky for an operation of war. We never succeeded in getting a vehicle with a wide enough track to cross mud. We tried the "Weasel," but it was no good. We did also try out a ski principle, but it was found not to be practicable in action.

With regard to craft, raiding troops, who were pretty used to that sort of thing, managed to make themselves exceedingly comfortable in landing craft—I think on the whole they enjoyed being in the landing craft more than they enjoyed stepping out of them, on many occasions. They had certain amenities, and we never made very long trips.

We did have drugs as a cure for seasickness, but some people were determined to be seasick and in some cases the drug was useless, though the ordinary chap reacted very well to it.

As far as submarines go, we might have some successes in the future, though the only time I ever went on a raid in a submarine I can remember being extremely uncomfortable. The submarine had a complement of fifty-five officers and ratings, and on top of that twenty-five extra soldiers, and when we had been under water for five or six hours you couldn't strike a match on a matchbox owing to the lack of oxygen. We never saw the light of day. We dived by day and only surfaced at night, the men got very cramped, even after a very short trip of four days, and they were not in very good shape when they got ashore, although they enjoyed it. It was their idea of heaven, as breakfast was brought to them in their bunks!

MAJOR A. D. R. G. WILSON: Would the Lecturer say what operations were carried out by Combined Operations Headquarters against the Japanese, and whether, in view of the long distances involved, any special lessons were learned by us or by the United States.

THE LECTURER: Combined Operations Headquarters was not, as a matter of fact, responsible for actual operations (with the exception of the early Commando raids). It was, however, responsible for training, doctrine, technique and so forth.

As far as I know, there were exceptionally few raids, as such, carried out against the Japanese mainland and islands. There was a very splendid gentleman called Lyon, who had a bogus ship which he dressed up to look like a Japanese trader, which carried out various raids against shipping.

The Commandos carried out numerous operations on the coast of Burma, mostly in direct support of larger operations.

We never had any experience of the "smash and grab" type of raid against the main islands of Japan. I do not think that the Americans carried out any either, but I may be wrong.

THE CHAIRMAN

Referring first to the discussion. Mud has been, as General Laycock has said, an insoluble (probably that is the wrong word) problem; and it may take an important place in landing operations.

Prior to the invasion of Normandy, photographs taken of the Bay of Cotentin at low water showed ominous dark patches which were clearly mud, and might be deep mud. If the latter, the plan to assault at half tide could not be carried out, since neither the men nor the vehicles could be got ashore from their landing craft. The scientists told us the depth of the mud depended on the existence or otherwise of a believed primeval forest beneath it, and that they must have samples from two feet under sea bottom.

The Commandos provided the men and the samples were obtained ; the mud bottom though nasty proved just firm enough and the plan went forward.

Taking Admiral Usborne's point, I think that, because the Germans made little use of raids, we should not put it down to lack of initiative. Until the later stages of the War they were in possession of most of the territory they needed, and their need for raids was less than ours who, as the inferior land Power, had none of what we needed.

As to the Japanese, I am sure, so far as our knowledge goes, General Laycock's answer was the right one.

When peace comes, the defence forces are inevitably cut to the bone. With this there is the temptation which assails the administrators to re-institute in the Forces the traditional formations—battalions, tanks, cruisers—of most use for the garrison and policing duties of peace, to the detriment of the new arms introduced by war, which lack a useful role in peace.

The last war saw a tremendous increase in the use of unusual weapons and methods over the war before, and there is not the slightest doubt that in the next war there will be even more.

So we must use our influence to forward and foster the development of formations such as the one the General has so well described to us.

I know I shall be expressing the wishes of all if I ask General Laycock to accept our most sincere thanks for the admirable and most interesting lecture he has given us to-day.

The customary votes of thanks to the Lecturer and Chairman were carried by acclamation.

THE GERMAN INVASION PLAN OPERATION "SEA LION"¹

By LIEUTENANT P. G. LACHLAN, M.B.E., R.N.

"What General Weygand called the Battle of France is over. I expect that the Battle of Britain is about to begin. Upon this battle depends the survival of Christian civilization. . . . The whole fury and might of the enemy must very soon be turned on us. Hitler knows that he will have to break us in this island or lose the war. . . . Let us therefore brace ourselves to our duty, and so bear ourselves that if the British Commonwealth and Empire lasts for a thousand years men will still say, 'this was their finest hour.'"—Mr. Churchill in the House of Commons on 18th June, 1940.

Two days after Mr. Churchill's declaration that Britain would never capitulate, Hitler intimated in a conference with his Naval Commander-in-Chief that he still thought England would fall without being invaded. He believed that blockade from the sea and attack from the air were all that would be necessary. At this conference Admiral Raeder gave Hitler a report on certain investigations that his staff had made regarding a possible invasion of England. He stated that it would be necessary to start vigorous air attacks on British bases in order to destroy ships under construction and repair. He went on to discuss a place for the landing, the question of mines, invasion craft, shipping available and ended by pointing out that air supremacy was an absolute necessity. But it was not till the end of June that Raeder's suggestion was taken up by the Supreme Command, who, on 2nd July, issued the first directive for Operation "Sea Lion."

In this directive, Hitler ordered an invasion of England to be planned. He called for reports from his Service chiefs on the possible strength of the British defence, details of shipping available and a survey of suitable landing points. He pointed out that landings should be planned to cover a broad front to facilitate subsequent deep penetration, and he asked his Air Force Command for an appreciation on the chances of attaining air supremacy. At the end of his directive, he explained that this was still a plan and that nothing had been firmly decided upon.

At a conference on 11th July, Admiral Raeder, keenly aware of British sea power, stated that an invasion should be used only as a last resort to force Britain to sue for peace. With this Hitler agreed; but in the next few days he changed his mind. On 16th July, he issued his directive for the invasion of England.

This stipulated that the landing operation was to be a surprise crossing on a broad front extending approximately from Ramsgate to a point West of the Isle of Wight. He asked each of the fighting Services for their views on preliminary operations, such as the occupation of the Isle of Wight or Cornwall. He then laid down certain preparations which were to be undertaken:—

(a) The British Air Force must be eliminated to such an extent that it would be incapable of putting up any substantial opposition to the invading troops.

(b) The sea routes must be cleared of mines.

(c) Both flanks of the Straits of Dover and the western approaches to the Channel, approximately on a line from Alderney to Portland, must be so heavily mined as to be completely inaccessible.

¹ Details of the discussions between Hitler and his Naval Commander-in-Chief on the German Plan for the Invasion of Britain are given in the Admiralty publication—*Fuehrer Conferences on Naval Affairs* (1940).

(d) Heavy coastal guns must dominate and protect the entire coastal front area.

(e) It was desirable that the English fleets, both in the North Sea and in the Mediterranean, should be pinned down (by the Italians in the latter instance), shortly before the crossing takes place. With this aim in view, the naval forces at present in British harbours and coastal waters, should be attacked from the air and by torpedoes."

These and other preparations Hitler ordered to be completed by the middle of August.

In reply to this directive Raeder sent to the Supreme Command a long memorandum explaining the difficulties from the naval point of view.

(i) The transport of troops would have to take place from a coast whose harbour installations and adjacent inland waterways had been extensively damaged through the fighting in the campaign against France or were of limited capacity.

(ii) The difficulties of wind and sea in the Channel.

(iii) The amount of work required to make ships suitable for beaching.

(iv) The difficulties of mine sweeping.

(v) The necessity for air supremacy for the protection of the invasion fleet while it was assembling.

(vi) The strength of the Royal Navy.

On 21st July Hitler stated that in view of the prevailing weather in the Channel, the main operation would have to be carried out by 15th September.

During the next few days the Army sent theoretical demands to the Naval Staff which allowed for 100,000 men being landed in the first wave in the area between Ramsgate and Lyme Bay. The amount of shipping required to carry this load was estimated as :—

1,722 barges,
471 tugs,
1,161 motor-boats,
and 155 transports.

Against 29th August there is an entry in the War Diary which read :—

"(a) The Army requires the transport of 13 landing divisions (about 260,000 men). In view of their anticipated tasks, the Army High Command regards this as the minimum number, from which no departure can be permitted, even if there are difficulties in transport.

(b) These 13 divisions must attack the English coast on the widest front (from Ramsgate to Lyme Bay); which means that they must leave the French coast as far as possible simultaneously and on the widest front. . . .

(c) The Army General Staff requires the landing to take place at dawn."

These demands by the Army began a series of acrimonious disputes with the Navy on the question of landing on a broad or narrow front. From the point of view of the Navy, security could only be guaranteed if the landing was limited to a narrow front in the Straits of Dover.

At a conference on 31st July, at the Berghof, Raeder made a fairly detailed report to the Fuehrer. He explained that all preparations were in full swing but that 15th September would now have to be considered as the earliest possible date. The mine sweeping, he reported, would take three weeks, given good weather and air

superiority; mine laying would begin at the end of August and would take two weeks.

He then went on to discuss the date and time of the landings. For this he gave three requirements:—

(1) The best time for the beginning of the landing would be about two hours after high tide. The fact that this entailed craft being beached and immobile for some twelve hours was preferable to landing on a rising tide. In the latter case there would be serious delays in disembarkation because craft would keep on floating off.

(2) The Army required to land at dawn, which would mean crossing the Channel in the dark.

(3) To take such an unwieldy fleet across the Channel in total darkness would be exceedingly difficult. Therefore, for navigational reasons, half-moonlight would be necessary.

Taking into account these factors, there were two suitable periods, from 20th to 26th August and from 19th to 26th September. The August period was out of the question as preparations would not be complete.

Raeder next gave his reasons for opposing the principle of landing on a broadfront. He argued that convoys from Le Havre and Cherbourg, for the western landings, would be sailing, virtually unescorted, into the immediate vicinity of the main naval bases of Portsmouth and Plymouth. He therefore gave his opinion that the landings should be concentrated in the Straits of Dover, where the shorter route could be more easily protected. The Air Force, said Raeder, would also not be able to protect the landing effectively over such a broad front.

Hitler then decided that an attempt should be made to prepare the operation for 15th September. The final decision as to whether the operation would take place then or in May, 1941, would be given after the Air Force had made concentrated attacks on southern England for one week. However, in a directive from the Supreme Command, issued on the following day, preparations for a landing on a broad front were ordered to be continued in spite of the Navy's warning.

For the next fortnight the "broad" versus "narrow" controversy raged strongly. There was little appreciation by the Army Command of the transport difficulties involved and they persistently refused to give way to the naval demands. The result was a deadlock between the two Services and, on 13th August, Hitler was asked to decide. A compromise was eventually reached, and in a directive dated 16th August, Hitler ordered the preparations for a landing in Lyme Bay to be discontinued. On 27th August, final decisions were made. Landings were to take place in four main areas: Folkestone-Dungeness; Dungeness-Cliff's End; Bexhill-Beachy Head; Brighton-Selsey Bill. The first operational objective of the Army was to be a line from Southampton to the mouth of the Thames.

Deceptive measures were also planned, the principal being a feint landing on the North-East coast. This latter operation involved four transports escorted by four cruisers which, two days before "Sea Lion," were to proceed South from Norway to the area between Aberdeen and Newcastle, and then to retreat at dusk back to the Kattegat. Other diversions were to be made towards Iceland, while the armoured ship "Admiral Scheer" was to make a commerce raiding sortie into the Atlantic.

On 1st September, the movement of shipping from German North Sea ports to embarkation ports began. The *Luftwaffe* had announced at the end of August that the air situation was favourable in spite of the effect of bad weather on their operations. They estimated R.A.F. losses since 8th August as 1,115 aircraft against their own losses of 467 aircraft. Control of the air therefore seemed likely and, on 3rd September, a directive from the Fuehrer's Headquarters gave 20th September as a tentative date for "D" Day.

However, within a few days the High Command had begun to have misgivings about the whole operation. German Intelligence reports calculated the size of the British Army in England as:—

320,000 trained troops
100,000 reserves
900,000 recruits
320,000 others (Home Guard, etc.)

Total ... 1,640,000

Unconfirmed reports put the number of divisions in England at 39, of which about 20 were regarded as completely operational, but whose artillery was believed to be only at half strength. These reports worried the High Command, and in addition, the preparation of barges was behind schedule. Nevertheless, it was decided to continue with the operation, but there was no longer the same anticipation of easy victory.

It was at about this time that Hitler began to show interest in the possibility of attacking Russia, and he ordered 12 divisions to be moved into Poland. He was still prepared to invade England, if necessary, but he was beginning to doubt whether "Sea Lion" was worth the risk.

On 6th September the war against England was reviewed. Raeder reported that the Navy was progressing with the flank mine barrages but that, due to bad weather and lack of air support, the sweeping was behindhand. He pointed out to the Army that the crossing would be difficult and that they could not count on keeping the divisions together. He gave his opinion that "Sea Lion" appeared possible given favourable circumstances regarding air supremacy, weather, etc.

The discussion then turned to what would be done if "Sea Lion" was not carried out. Hitler agreed that the appearance of an invasion should be kept up at any rate. The possibility of operations in the Mediterranean was stressed and in particular that Gibraltar should be seized before the U.S.A. came into the War. It was further agreed to concentrate on the disruption of British merchant shipping by increased submarine warfare and by air attacks on the ports. These latter operations should be continued ruthlessly, irrespective of whatever other operations might be undertaken.

On 10th September, the Naval Staff reported that, though the weather had been bad, they would be ready on 21st September. They considered that air attacks ought now to be shifted from London to Portsmouth and Dover. However, they were not prepared to demand this since they knew that Hitler hoped his attacks on the capital alone might be decisive.

On 13th September the R.A.F. sank 80 barges at Ostend; ships of the Royal Navy bombarded Calais, Boulogne, Ostend and Cherbourg, while light coastal forces attacked minesweepers and barges. On the same day capital ships of the Home Fleet moved South to Rosyth in readiness to dash at full speed to the invasion area.

On the next day, Hitler called his Commanders together. Before the meeting began, Raeder presented a short memorandum. It pointed out that the air situation did not provide the necessary conditions for carrying out the Operation, as the risk would be too great. He further stressed the importance of intensifying the bombing on London in the hope that these attacks might have a decisive outcome. At the conference which followed Hitler agreed that the degree of air supremacy necessary to justify executing operation "Sea Lion" had not yet been reached. He said that on 17th September he would decide whether the operation would take place on 27th September or not.

On 17th September, an entry in the War Diary stated :—

"The enemy Air Force is still by no means defeated ; on the contrary it shows increasing activity. The weather situation as a whole does not permit us to expect a period of calm. . . . The Fuehrer therefore decides to postpone "Sea Lion" indefinitely."

Two days later a directive was issued to disperse the invasion armada but to keep it at ten days notice.

The situation was summed up in the War Diary :—

"(i) The preparations for a landing on the Channel coast are extensively known to the enemy, who is taking more counter-measures. Symptoms are, for example, operational use of his aircraft for attacks and reconnaissance over the German operational harbours ; frequent appearance of destroyers off the South coast of England, in the Straits of Dover, and on the Franco-Belgian coast ; stationing of his patrol vessels off the North coast of France ; Churchill's last speech, etc.

"(ii) The main units of the Home Fleet are being held in readiness to repel the landing, though the majority of the units are still in Western bases.

"(iii) Already a larger number of destroyers (over 30) has been located by air reconnaissance in the southern and south-eastern harbours.

"(iv) All available information indicates that the enemy's naval forces are solely occupied with this theatre of operations."

Troops and ships were kept in readiness until 12th October, when the Operation was postponed until the Spring of 1941. In a directive from the Fuehrer's Headquarters, he ordered the army formations allocated for "Sea Lion" to disperse. The British, he said, must continue to believe that preparations for an attack on a broad front were being made. At the same time the German war economy must be relieved of some of the heavy strain placed upon it by the invasion preparations. By the Spring of 1941, however, Hitler and his staff were deeply involved in the preparations for invading Russia, and operation "Sea Lion" was finally shelved.

CONCLUSIONS

The Reports on the Naval Conferences only give one aspect of the planning, but they suffice to give a very good indication of the whole situation. Admiral Raeder was "dismayed" to discover at one stage that the Army thought the operation comparatively simple. That is not surprising. Their army was undoubtedly much larger and better equipped than ours. Their soldiers had just won a stupendous victory in France, and morale must have been immeasurably high. They knew how the British had escaped from Dunkirk. They could see the burned-out vehicles and other equipment which lay abandoned on the shores of France. They knew that many of our men had not even been able to rescue their rifles out of the maelstrom. They

must have guessed that Tommy Atkin's morale was not at its highest. No wonder the German Army were confident that they could do their job once safely put ashore.

Then there was the *Luftwaffe*. They were set the task of defeating the R.A.F.; but in this they failed. The story of the "Battle of Britain" is known to everyone, yet the Reports of the Conferences give the impression that that was not the main reason which stopped the invasion. The German Air Force knew, even if their figures were more fantastic than ours, that they were shooting down a lot of British aircraft. In their reports the words "superiority" and "supremacy" seem to have been used synonymously when referring to the air situation. The High Command seem to have required air "supremacy," which was unnecessary. They treated the whole affair as very much of a kid-glove party, but that is not war. In an operation of such vital importance to Germany they should have been prepared to accept losses commensurate with the size of the prize they were after. They could have maintained an adequate measure of superiority in the air, over a limited front, to have invaded successfully.

With the mention of the possible size of the invasion front we plunge into the thick of an inter-Service battle. It formed the principal diversity of opinion among the German Commanders and demonstrated not only their ignorance of naval affairs, but the lack of co-operation that existed throughout the Services. Raeder demanded a narrow front, as he could not hope to protect long supply lines, and he stated that the *Luftwaffe* would be in agreement, as they could not maintain superiority over a wide front. That seems logical enough, but the *Wehrmacht* insisted on a broad front. Hitler was asked to arbitrate and the result was a compromise. This may be a sound manœuvre in politics, but in warfare half-measures spell disaster.

The German Army's main task was obviously to annihilate the British Army. Where they did it mattered not at all, so why the broad front? Had the grand disciples of "blitzkrieg" done a volte-face? Whatever the reason, they were teutonically stubborn enough to try and wreck the overall plan by their insistence. When Field Marshal Montgomery took over the planning for the invasion of Sicily, he changed the plan in order to concentrate his attack on the south-eastern corner. When we invaded Normandy, with our preponderance of sea and air power, we still concentrated our punch over a narrow front. The reasons in these two cases may have been different from those which existed in 1940, but broadly speaking they seem to demonstrate a sound strategic principle.

What were the naval considerations? Their problem was how to land the Army and its supplies safe from air and sea attack. With the air more-or-less neutralised they faced a vastly superior Navy, and for this reason they could not hope to defend long supply lines. The shorter the supply lines the greater were their chances of success. Therefore, the plan must include the shortest possible sea route, which meant the Straits of Dover. Even so the protection of the assault and follow-up convoys would have been the most urgent single problem of the whole operation.

The first step should, therefore, have been taken by the strategic bombing force. As it was, Hitler clung to an idea that by the constant bombing of London the British would break and the invasion would not be necessary. Had he decided otherwise, then, as Raeder asked for in the first place, he should have ordered an all-out bombing attack on shipping. Every effort should have been made to reduce the fighting potential of the Royal Navy before the German "D" Day.

Bombing, however, would not have solved the whole problem. Even allowing for considerable damage having been inflicted on the Royal Navy by the *Luftwaffe*,

the most careful planning would have been necessary for the defence of the actual convoys. Hitler's directive to lay an impenetrable minefield on either side of the sea route may have been an impossibility, but it was the right idea and should have been carried out with the utmost vigour. His only other powerful weapon of defence was his U-boat fleet. Every one of his submarines should have been recalled from the Atlantic to take part in the defence of the invasion convoys. His surface units were few, in comparison to ours, but with his coastal forces they should have provided the close escort.

For the further protection of the assault convoys some degree of tactical surprise would have been achieved by a night crossing, but this, of course, would not have assisted the follow-up convoys. To overcome the difficulties in this latter case there seem to have been two main requirements. First the capture of a port, which should have been the first phase of the military plan. This was essential, not only for rapid unloading but for the protection of shipping. Secondly, convoys should have been sailed only during daylight when they would have had cover from the air as well as from shore batteries. The Germans would have had a bad time in the Straits but probably they could have landed and supplied the Army, provided they were given the highest priority by the Air Force.

When Hitler decided on war what was his plan for England's future? Her eventual subjugation must have been part of his overall strategy, but still he was content to ignore sea power. Yet it was sea power that finally upset his plans for invasion. It does not matter whether it was the R.A.F. or the Royal Navy which was the particular instrument that decided him. He was frightened of attempting a Channel crossing. He failed, as a leader, to give his staff the singleness of purpose and the impetus which are always necessary when embarking on a hazardous operation. That the German Navy could have carried their Army across the Channel, in spite of our opposition, seems certain. But where the High Command should have pressed forward with all their resources and energies to overcome the obstacles in their path, they tackled the task like a bevy of school-girls frightened of getting their party frocks soiled.

MERCHANT SHIP AIRCRAFT CARRIERS

By CAPTAIN R. C. BAYNE, R.N.

MERCHANT Ship Aircraft Carriers, or M.A.C. Ships as they were more commonly termed, came into existence in 1943 and continued to operate till the end of the late war against Germany. The following article is an attempt to trace the evolution of M.A.C. ships, to give a brief outline of their workings and achievements and to see if any useful lessons can be learnt therefrom.

THE EVOLUTION OF THE M.A.C. SHIP

During the 1914-18 war, merchant ships were defensively armed with a gun so that they could defend themselves if attacked by "U" boats on the surface. In the 1939-45 war, a similar policy was adopted from the start and, in addition, plans were made to give merchant ships a high-angle gun for defence against air attack but the number of such weapons in the early days was limited. After the collapse of France in June, 1940, the air threat to our merchant shipping became serious, the chief form of attack being close range bombing and machine-gunning. To counter this, machine guns and other close range A.A. weapons were pressed into service and mounted in merchant ships as rapidly as possible. This defence, in addition to fighter cover and patrols provided by the R.A.F., gave a fair measure of protection to coastal shipping, and later barrage balloons increased the protection afforded to our convoys.

In the Atlantic and with ocean convoys a rather different situation was developing. Late in 1940, the Germans started sending out from Bordeaux and other stations on the western seaboard of France long range aircraft to prey on our shipping beyond the range of shore-based fighter cover. These long range "Condor" and "Kurrier" aircraft were large and multi-engined and could stand a lot of punishment from the ordinary .303 inch machine guns mounted in our merchant ships. The escorts for Atlantic convoys had a comparatively weak A.A. armament as they were principally concerned with "U" boats, and by the Spring of 1941, the losses in these convoys from both "U" boats and aircraft were becoming alarming. To deal with the air threat to ocean convoys two measures were adopted; one was to mount Bofors guns in a proportion of ships in outward bound convoys as far as the American Continent where they were taken out and mounted in returning ships; the other was to fit out a number of Catapult Aircraft Merchant ships or C.A.M. Ships and to sail at least one with each convoy. These ships were tramps equipped with a rocket-operated catapult, a fighter aircraft and the necessary fighter direction gear. When a prowling long-range aircraft threatened the convoy, the fighter aircraft in the C.A.M. Ship was catapulted at the appropriate moment to shoot down the enemy and so prevent other forces being "homed" on to the convoy. Having done his job, the fighter pilot baled out and was picked up by the nearest escort, while the aircraft crashed and was lost.

The introduction of the C.A.M. Ship is an interesting, though perhaps logical, development of the ordinary Defensively Equipped Merchant Ships (D.E.M.S.). While previously the gun mounted in a ship had been the principal weapon of self-defence against both "U" boats and aircraft, the stage had now been reached when the range was extended by introducing an aircraft to carry the gun close to the enemy aircraft where there was a good chance of shooting it down.

The C.A.M. Ship was virtually the forerunner of the M.A.C. Ship which came later in 1943, and had a different function. Whereas C.A.M. Ships were developed

to deal with enemy aircraft, M.A.C. Ships were designed for defence against "U" boats which, while on the surface kept well outside gun-range of convoys; their aircraft carried the lethal weapon—in this case the depth charge or rocket weapon—to within striking distance of the "U" boat. Again, C.A.M. Ships only carried a one-shot weapon since the aircraft once catapulted could not return, but M.A.C. Ships were fitted with a flight deck for landing on and could operate three or four aircraft.

M.A.C. Ships were originally planned to help close the "Mid-ocean Gap," namely, that part of the Atlantic mid-way between the United Kingdom and the North American Continent which, in 1942, was outside the effective range of shore-based Coastal Command aircraft and which was an area where "U" boats were having considerable success. Escort carriers would perhaps appear to have been a better solution to the problem, but they took much longer to produce and the time factor was vital.

Both C.A.M. Ships and M.A.C. Ships were developed to meet particular situations, but the former were disbanded and their catapults removed in 1943, because the dividends they were paying no longer justified the effort and manpower involved. Even though the "Mid-ocean Gap" was closed by very long range Coastal Command aircraft in 1943, M.A.C. Ships proved so successful that they were continued to the end of the German war. At one time when "U" boats were being troublesome in the Indian Ocean, consideration was given to employing some of them in those waters.

It is believed that M.A.C. Ships were first officially considered at the end of 1941, but it was not till well into 1942 that they were looked on with any real favour. Originally, the programme was to fit out two new grain M.A.C. Ships for trial, but this was soon increased to six—the maximum number of such ships that could be built on the available slipways. Later, when the grain type of M.A.C. Ship seemed to be a well-established proposition, all question of trial ships was given up and the idea was extended to tankers carrying heavy grade oils. At one time the suggestion was put forward to fit out as many as fifty M.A.C. Ships, but this was found to be impracticable owing to production limitations in providing arrestor gear and other ancillary equipment. It also seemed doubtful whether the aircraft and air crews could be made available without upsetting some other more important project.

Finally, after much discussion, a programme of twenty M.A.C. Ships was embarked on. This included:—

6 New Grain Ships.

4 New Tankers.

10 Converted Tankers, two being Dutch.

In actual fact, only nineteen were produced as difficulty was experienced in finding the tenth tanker for conversion. Broadly, the characteristics and particulars of the two types were as follows:—

Particulars, etc.

Grain M.A.C. Ships Tanker M.A.C. Ships

Tonnage (Deadweight)	...	About 8,000 tons.	About 11,000 tons.
Speed ... ..	...	About 12½ knots.	About 11½ knots.
Length of Flight Deck	...	410 to 420 feet.	About 460 feet.
Breadth " " "	...	62 feet.	62 feet.
Flight Deck above W.L.	...	28 to 30 feet.	30 to 32 feet.
Aircraft carried	...	4 Swordfish.	3 Swordfish.

<i>Particulars, etc.</i>	<i>Grain M.A.C. Ships</i>	<i>Tanker M.A.C. Ships</i>
Stowage for aircraft, etc. ...	Hanger and lift.	On deck.
Defensive Armament ...	1—4in. gun. 2—Bofors. 4—Oerlikons.	1—4in. gun. 2—Bofors. 6—Oerlikons.
Other equipment ...	Paravanes. Radar.	Paravanes. Radar.
Cargo capacity (as percentage of normal capacity if ship had not been fitted as a carrier).	About 80 per cent.	About 90 per cent.
Propelling machinery ...	Diesel.	Diesel.

Needless to say, there were many problems to be solved and differences to be settled when deciding on what was to be fitted in M.A.C. Ships and at all stages the Ministry of War Transport had to be closely consulted. When considering material requirements, there were generally two schools of opinion: those who were in favour of fitting all the usual naval equipment and gadgets in the ships so as to obtain the maximum efficiency in operation, and those who were for simplicity and rapidity of production, since nearly every additional piece of equipment meant some delay in completion. As things turned out, M.A.C. Ships were essentially austerity carriers with frills and gadgets reduced to a minimum since only in this way could they be produced quickly.

Another controversial problem was the manning of the ships. Originally the intention was that they should fly the Red Ensign and be manned by the Merchant Navy, only the air crews, maintenance ratings and gunners for manning the defensive armament being Service personnel. As planning progressed, it was the opinion of many that the ships, as carriers, could only be operated efficiently if manned by naval personnel, the argument being that the responsibilities and technical knowledge required of merchant navy officers and men would be demanding too much of them. Eventually it transpired that personnel for manning the ships on a White Ensign basis would not be available and so they had to be merchant navy manned. As subsequent events were to show, the Merchant Navy responded in a magnificent manner to the responsibilities that were entrusted to them. The necessary technical knowledge, largely engineering, was arranged for by giving the Chief Engineer and selected ratings short courses in the maintenance and upkeep of arrester gear and other special flying equipment. Similarly the Masters who were selected to command the ships were given various courses, including a period at the Western Approaches Tactical School and experience in a H.M. carrier, so as to fit them for their duties.

Each M.A.C. Ship carried a R.N. or R.N.V.R. Lieutenant or Lieutenant-Commander (experienced in flying) as Air Staff Officer and adviser to the Master on all air matters and flying operations.

M.A.C. SHIPS IN OPERATION

The first M.A.C. Ship—the "*Empire MacAlpine*," was completed in April, 1943, and after trials and a few days working up sailed in May with an outward bound Atlantic Convoy. She operated her aircraft with complete success. Thereafter, M.A.C. Ships came into being in rapid succession, the nineteenth ship being ready just over a year later.

One of the difficulties encountered in operating M.A.C. Ships was arranging suitable ports of call, since their cargoes as well as their aircraft had to be dealt with. The aircraft were usually flown on or off at the start or end of a voyage, but provision always had to be made for a possible crashed aircraft to be hoisted out. There were only certain ports in the U.K. where grain ships could be discharged, using the suction method, and on both sides of the Atlantic only a limited number of ports were suitable for embarking and disembarking heavy oils. The ports finally decided on were, on the far side of the Atlantic, Halifax with New York as an alternative, and, in the Home Country, Liverpool for grain ships and the Clyde for tankers. Maydown in Northern Ireland was the air station to which aircraft disembarked and where air crews were based and trained. On the other side, Dartmouth, near Halifax, was used.

M.A.C. Ships were allocated for convoys by the Admiralty (Trade Division) in consultation with the Ministry of War Transport and the C. in C. Western Approaches. The aim was to try and sail at least one M.A.C. Ship with each Atlantic Convoy. After about twelve ships had been produced this was achieved almost without fail, and two ships per convoy was not unusual. As with all merchant shipping, it was essential to keep the "turn round" of ships as short as possible; by careful planning and close co-operation of all concerned, this was generally achieved.

ADMINISTRATION OF M.A.C. SHIPS

The administration of M.A.C. Ships was complicated involving, as it did, several authorities with differing interests. Finally, a "Trinity" of responsibility was established, which worked smoothly and efficiently and consisted of the following:—

- (i) *Ministry of War Transport* who, through shipowners or managers, dealt with all commercial and ship management matters.
- (ii) *Admiralty* who, through Trade Division, the Flag Officers and D.E.M.S. Staff Officers at the ports, dealt with naval matters such as discipline, pay, welfare, movements, victualling and casualties of Service personnel embarked, as well as material problems in connection with Admiralty equipment and naval stores in the ships.
- (iii) *Flag Officer Carrier Training*, who dealt with all flying training, matters in connection with the technical efficiency and reliefs of Fleet Air Arm personnel, and also certain material items such as air stores and equipment.

Trade Division at the Admiralty provided the necessary headquarters link with the Ministry of War Transport on the commercial side and through normal naval channels with the various Naval Authorities at the ports, etc

Immediately a M.A.C. Ship arrived in port, the D.E.M.S. staff officer called a meeting of all those concerned to draw up an agreed programme for the "turn round" of the ship. This had to meet all anticipated requirements and commitments, including berthing and discharge of cargo, what repairs were to be taken in hand and their probable duration, replenishment of fuel and stores, crew reliefs, etc., etc. Having determined a date when the ship would be ready, a departure programme had to be settled, including arrangements for embarking aircraft and, where necessary and practicable, a short working-up period if newly-formed aircrews were to be embarked. Sometimes an agreed programme was upset by an unforeseen defect developing, when the whole process had to be gone through again, but in general, the "turn round" of M.A.C. Ships compared favourably with other shipping.

PERFORMANCE AND ACHIEVEMENTS

It would take too long to give more than a brief outline of the performance and achievement of M.A.C. Ships. It can, however, be said that they were more successful than the most sanguine could have expected. There was a keen spirit in the shipyards that built or converted the ships to make a good job of them and to keep to programme dates. Managers and owners did all they could to ensure their smooth running and the enthusiasm of the Masters and ships' crews on the one hand and of the Air staff officers and air crews, etc., on the other, to make the venture success was remarkable. The spirit of co-operation and team work, from top to bottom, between Merchant Navy and Royal Navy, was all that one could have asked for. As an example of this, in one grain ship after a storm, the ship developed a list and, on the suggestion of the flying crews, the holds were opened up and all hands, from all branches, worked together to shift the grain and so bring the ship upright and fit for flying again.

There is little doubt that the Merchant Service as a whole took a pride in the fact that their ships were able to play a useful part in the Battle of the Atlantic. The moral effect on convoys which included a M.A.C. Ship was most noticeable. It was reported on one occasion that at a Convoy Conference when the Conducting Officer, having finished an address, asked if there were any questions, one Master enquired if there would be an aircraft carrier with the convoy. On being told that there would be two M.A.C. Ships, all the Masters applauded loudly!

By the time M.A.C. Ships were functioning in any numbers, the Battle of the Atlantic had been won and very long-range aircraft were operating over the old "Mid-Ocean Gap." In consequence sightings and attacks on "U" boats by M.A.C. Ship aircraft were comparatively few. Nevertheless, they did have their excitements, though their principal achievement was in keeping "U" boats down and so preventing them from sighting or gaining a position from which to attack the convoy. M.A.C. Ship aircraft were also extremely useful in rounding up ships that had "straggled" and it has been said that for this work one M.A.C. Ship was equivalent to four escort vessels.

For a short period before the Normandy landings, M.A.C. Ships on their homeward journey were taken off operations, being employed in ferrying aircraft from New York for the Second Front.

Though M.A.C. Ships had their misfortunes, none were lost at sea. Their aircraft performed some remarkable feats, as the following account, published in the Press in February, 1944, under the caption "Naval Pilots' Amazing Landing" will show:—

"During a storm of such violence that men were unable to stand upright on the deck of an escort carrier, a young naval airman made an amazing landing back on the parent ship.

The wind strength was so great at the time that the normal landing conditions had to be reversed and, instead of approaching over the stern with the ship steaming into the wind, the pilot, obeying orders, made his landing over the bows with the ship steaming down wind. Although the wind along the carrier's flight deck was reduced by this manœuvre, it was still so powerful that when the Deck Landing Control officer tried to help the pilot by giving him landing signals, he was unable to keep his balance in spite of being supported by two other officers.

The pilot of the aircraft, Sub-Lieutenant (A) J. Y. C. Galbraith, R.N.V.R., accomplished the feat, and his ship claims that the wind strength was a record for any landing made on a carrier.

The escort carrier was part of a force escorting a convoy. During the passage, conditions were so bad that flying was seldom possible. During a break in the weather, Sub-Lieutenant Galbraith with Sub-Lieutenant (A) P. B. Adams, R.N.V.R., as Observer, took off on a patrol. At the time of take-off there was a clear sky and practically no wind, but when the aircraft returned to the ship a violent storm was raging. The wind speed reached more than 60 knots and the aircraft was kept circling round the ship in the hope that the weather would improve. When the light began to fail, however, it was decided to try to recover the aircraft. The pilot was given his instructions, the normal conditions for landing were reversed and a perfect landing was made, despite the fact that during the recovery the carrier had to take avoiding action when two ships suddenly loomed up out of the rain and mist. Even when the aircraft was on the flight deck, every available officer and man was required to hold it down till it was eventually stowed in the ship's hangar."

This landing was made on the M.A.C. Ship "EMPIRE MACRAE"—the smallest and slowest type of carrier existing, which makes the performance even more astonishing.

Another notable achievement was a perfect landing made with a visibility of only fifty yards on the deck of the "EMPIRE MACALPINE." To guide the pilot in, a fog buoy was streamed, but the aircraft was not sighted from the bridge until it was on deck.

THE FUTURE OF M.A.C. SHIPS

In considering the future of M.A.C. Ships, it should be appreciated that, as with C.A.M. Ships, they were developed to meet a particular situation, but they were essentially an extension of the principle of the merchant ship equipped for her self-defence. Perhaps one of the most useful attributes of these vessels was their morale value. Their operation and administration was complicated, and they could only carry certain cargoes which limited their usefulness, since commercially they could only be employed on certain runs.

If, in 1939, the Fleet Air Arm had been larger and we had had a sufficiency of carriers to escort our convoys it seems likely that C.A.M. Ships and M.A.C. Ships would never have been evolved. But, if history is any guide, it seems likely that at the beginning of any future major war we shall again be short of both carriers and escort vessels and, therefore, one may conclude that M.A.C. Ships, which can be quickly produced, may yet again come into existence though their characteristics are likely to be very different from those of the late war.

Whatever may be the developments of atomic bombs, and other frightful weapons, attack on our shipping in any future war is likely to be carried on by the lighter weapons of destruction such as the more orthodox aircraft and the submarine, leaving the heavier forces to hold the ring. It seems probable, therefore, that the counter to such attacks will still be long range and carrier-borne aircraft and escort vessels. If this proves to be so, then M.A.C. Ships in some modified form may still play their part.

ALLIED AIR POWER IN THE MEDITERRANEAN 1940-45

By AIR MARSHAL SIR HUGH LLOYD, K.B.E., C.B., M.C., D.F.C.

On Wednesday, 22nd October, 1947

ADMIRAL OF THE FLEET LORD CUNNINGHAM OF HYNDHOPE, K.T., G.C.B., D.S.O.,
in the Chair

THE CHAIRMAN: It is really unnecessary for me to tell you anything about Air Marshal Sir Hugh Lloyd. I think everybody knows his record. He was one of the first at Malta, and was there during its hammering.

LECTURE

I WILL begin with a few dates. Italy declared war on 10th June, 1940. We captured Benghazi three times. When we first captured it in February of 1941 we lost it in the following April—at the same time as the German invasion of Greece. We captured it for the second time in December, 1941, but in the following month we had lost it again in the enemy advance which was only halted when Rommel could see Alexandria just across the bay.

The third capture of Benghazi was in November, 1942, at the same time as the Allied landings in North Africa, and at long last in the May of 1943 the African Campaigns were at an end. Sicily was invaded in July, 1943, Salerno in the following September, and finally the South of France in the August of 1944.

Until the Allies were established in Italy the aim of the air forces, as that of the sea and land forces, was directed towards the one common and single aim of defeating the enemy armed forces: first, in the Western Desert, later in North Africa, and then in Sicily and Italy. After the Allies had been established in Italy the heavy and medium bombers in the Mediterranean were also engaged in the air offensive on Germany.

The initial aim of the Axis on the other hand was to drive us out of Egypt and so uncover our vital asset of oil in Iraq and in Persia. Subsequently, however, the Axis aim was limited to the blocking of the approaches to the Continent and, later still, those to Germany.

Until the middle of 1943, when the Axis had been driven out of Africa, the dominating theme throughout the campaigns is the struggle for the control of sea communications. The control of those communications was of vital importance to the enemy, as without it there was no hope of capturing Egypt or, indeed, of remaining in Africa. It is true, of course, that we had the alternative route to the Middle East round the Cape, but it was twelve times as long as the Axis route from Europe to Africa, it was more than twice the distance of our sea route through the Mediterranean and by doubling the turn round time of our shipping it not only halved the carrying capacity of the ships but added an enormous burden in the shape of surface escorts, additional fuel consumption, etc.

Before Italy went to war we had been warned. There were straws in the wind. The German invasion of Norway, for example, should have offered us a splendid opportunity to exercise our sea power: the enemy communications were largely by sea and except for the southern tip of Norway our naval forces were based athwart their path. We did, in fact, land two expeditions, but from that point nothing went right. The German air force had almost complete air superiority in Central

Norway and they reinforced, supplied, and gave direct support to their land forces; and, in addition, but of vital importance to our operations, there were the attacks on our ports and our shipping. Everything possible was done with a few aeroplanes based in Norway, with aircraft operating from carriers, and even with aeroplanes based in Britain—but the odds were too great. General Jodl, in a report on the operations dated 12th June, 1940, writes as follows: "The Air Force has provided a proof, decisive for future developments, that no fleet (however strong it may be) can operate in the long run within the close, effective range of an enemy air force."

WAR IN THE MEDITERRANEAN

One month after our withdrawal from Norway, Italy went to war, and out in the Mediterranean we began to witness a different kind of war, in fact one of the traditional pattern. Our fleet, which was under the command of our Chairman to-day, was numerically inferior to that of the Italians; nevertheless, there was no doubt as to who was in control of the sea communications; indeed, Admiral Cunningham spent a good deal of his time in an endeavour to entice the enemy fleet from within its barrage of balloons and torpedo booms at Taranto. The Italian air force, fired with the skill of their German comrades in Norway, tried to emulate them; but the result was quite different: they were unable to prevent our fleet from operating in the Central Mediterranean or the sailing of a few convoys through that sea. As the Italian fleet still failed to put in an appearance, our aircraft carrier "Illustrious" flew her aeroplanes right into the lair of the enemy at Taranto. The result was the crippling of three battleships and two cruisers.

But in the January of 1941, there were more straws in the wind. When a heavily escorted convoy was on passage from Gibraltar to Malta and Greece, the German air force had arrived in Sicily, and in this first encounter with the *Luftwaffe* in the Mediterranean the "Illustrious" was badly damaged, the "Southampton" sunk, and the "Gloucester" damaged. The *Luftwaffe* also made it clear that Malta could no longer be regarded as a secure base.

Some three months later those events were overshadowed by the victory at Matapan. An Italian cruiser had been crippled by carrier-borne aircraft and this event possibly resulted in the subsequent moves of the Italian fleet when Admiral Cunningham, seizing his opportunity of an engagement by night, damaged one battleship, and sank three cruisers and two destroyers. This battle and that extremely courageous exploit at Taranto had brought about a change in the relative strengths of the two fleets and, as if to underline the verdict of our superiority, our fleet bombarded Tripoli—the only port in Africa from which the Axis forces in Cyrenaica were being fed and maintained.

The next event I will mention is the capture of Crete by the Germans. Judged by the old standards, the British fleet was powerful enough to give us command of the sea in that area—by that I mean to use it for our own purposes and to deny its use to the enemy. But what was the position of the 27,000 tons of stores which were despatched at this time from Egypt to Crete? 21,000 tons were turned back, 3,400 tons were sunk by enemy aircraft and less than 3,000 tons reached Crete. It is true that the German land forces which were embarked for Crete were given little protection by their surface forces and a great many were destroyed by our naval forces, but many got there, and without their help the German airborne forces in Crete would have had little hope of victory.

But the most damaging result of this particular struggle was the sinking of three

of our cruisers and six destroyers and the serious damage to one battleship, one aircraft carrier, three cruisers and one destroyer—all by enemy air action.

The lessons of air power at sea which we had learned in Norway were certainly now being driven home in the Mediterranean. Just as had happened off the Norwegian coast, our naval forces had now to operate inside a circle of enemy air bases, and since we ourselves lacked aircraft and air bases in the critical area, the Axis position was at this time unchallengable. If we had any doubts before the fall of Crete about our ability to sail convoys through the Mediterranean and to cut the Axis supply lines to Africa, we had none after Crete had fallen. The Central Mediterranean became an "Axis lake" on which they sailed their convoys, and the guardians of that lake were the aircraft the enemy had concentrated in Sardinia, in Sicily, in Crete and in Cyrenaica.

MALTA

A glance at a map will show that the Axis position was one of very great potential strength. From those four air-base areas the Axis aircraft could reach out and inflict severe punishment on any surface ships which dared venture towards their lake. But Malta was inside it—the nigger in the wood pile; moreover Malta still had the means to strike with the submarine and the aeroplane. The submarine had been a new and a major factor in the Kaiser's War, and despite our command of the sea and our undefeated battle fleet it had brought us nearer to a fatal crisis than ever in our previous history. The aeroplane had not achieved such a comparable record as yet, but as far back as 1917 General Smuts, in one of those flashes of his far-seeing wisdom, had said "Air superiority may in the long run become as important a factor in the defence of the Empire as sea superiority." In the June, July and August of 1941 the submarines and aeroplanes based on Malta sank 58 per cent. of the Axis shipping which sailed from Europe to Africa. By September the Axis shipping losses at sea from submarine and air attack had become sufficiently critical for the Axis to close the Sicilian Channel, which had been their normal sea route to Africa. An entry in Ciano's diary dated 25th September, 1941, reads as follows: "In responsible naval quarters they are seriously beginning to wonder whether we should give up Libya voluntarily rather than wait until we are forced to do so by the total lack of shipping." On 9th November the entry in the diary refers to the closing of the Sicilian Channel when Ciano writes: "Since 19th September we had given up trying to get convoys through to Libya; every attempt had been very costly and the losses suffered by our Merchant Marine had reached such proportions as to discourage any further experiments."

I apologize for these quotations, but Ciano ought to know: the customer is usually right. I therefore venture to read just one more in this context and it is an important entry because it reveals the precise extent of the interference with the Axis sea communications by the submarines and aeroplanes based on Malta. It is dated 6th October, 1941, and reads: "Supplies for Libya are becoming more and more difficult. Only 20 per cent. of the material set aside for September has been shipped and delivered." I must, however, correct the impression given by Ciano that the Axis had abandoned the sending of supplies to Libya after the closing of the Sicilian Channel; in fact, traffic was being diverted from Naples to Taranto and such shipping as sailed from that port endeavoured to give Malta as wide a berth as possible by hugging the Balkan coast with, I may add, no great measure of success; and when it came to the crossing over to Africa, those ships were then attacked, and with increasing intensity, by our Air Forces based in the Desert.

Ciano is not of much help when we wish to assess the effects of the four months bombing of the port of Tripoli, ending September, 1941; but we do know, as a result of damage to the power installations, transportation, and general facilities, that the turn-round time for ships in the port had been increased by three and half times. Ciano is, however, of assistance in regard to the attacks on Naples as in an entry dated 11th July, 1941, he writes: "Naples . . . serious attack. Not because of casualties as of damage: most serious was the fire at the Italo-American Refineries. We lost 6,000 tons of oil and God knows how badly we needed it. Duce said, 'I am glad Naples is having such severe nights. The breed will harden. The War will make the Neapolitans a Nordic race.'"

The nigger in the Axis wood pile was proving to be a battle-winning factor, particularly as in the November of 1941 two cruisers and four destroyers had returned to Malta. The effect was immediate: the sinkings between Europe and Africa for November soared to 77 per cent. And I am sure that Malta would have been the battle winning factor had it not been for the long delay in mounting the offensive in the Desert.

The offensive began in the middle of November, 1941, but by that time the long days and the clear nights had gone and the weather had broken; moreover, the Axis had recognized the simple truth at last that Rommel could not fight without supplies. The vital danger was Malta and, as you know, the Axis had decided in the October of 1941 to capture her by assault. Over in Africa, however, Rommel was soon bundled out of the mighty bastion of Cyrenaica from which our air forces would be able to extend their reach over the Central Mediterranean to assist in the destruction of such shipping as dared venture to put to sea and to complete the destruction of Tripoli—the only remaining Axis port in Africa. Benghazi was captured on 29th December, 1941, and the Eighth Army was driving on towards Tripoli; but some three weeks later Rommel made his "Reconnaissance in force of the British position" with only three days' reserves of supplies left in his hands. He travelled far and he travelled fast; indeed his advance was only halted at the gates of Alexandria, and I firmly believe that he would have captured Alexandria and Egypt, too, had it not been for the air forces in the Desert which alone turned what might have been a rout into a retreat. Mr. Winston Churchill said, "What saved us was superior air power."

Whilst those battles were in progress in Africa the scale of the air attack on Malta had been steadily increasing in intensity. During the twenty days which preceded Rommel's attack, 950 bombers had attacked the three aerodromes on Malta. In February, the total tonnage of bombs dropped on the same three aerodromes was 691, and in March, when the attacks included the submarines and shipping in the Grand Harbour, the total was 1,754 tons. In April, moreover, the total tonnage of bombs was the equivalent of 34 Coventrys—6,728 tons. But the most serious aspect was that Malta was being starved into surrender for the lack of food and petrol. In the February of 1942 an attempt had been made to sail a convoy from Alexandria, but except for one merchant ship which scrambled into Tobruk badly damaged, the remainder were sunk by air action, and in the following month there was another gallant effort when three merchant ships arrived at Malta but all were destroyed in harbour before they could be unloaded.

By June, however, the island had been reinforced by Spitfires which had been flown from carriers to the West of Sardinia, and as local air superiority had been regained one convoy was to sail from the East and one from the West to arrive at

Malta together. As soon as the convoy from Egypt put to sea the Italian fleet sailed from Taranto, but it was attacked with loss by submarines and the combined air forces of Malta and the Middle East and was back again behind its booms within 48 hours. Unfortunately, the convoy from Egypt had been turned back while the enemy fleet was at sea and was being battered to bits by the Axis air forces based on Crete and Cyrenaica; having used up most of its anti-aircraft ammunition in defending itself, orders were given for its return to Egypt.

The convoy from Britain was also in serious difficulties, having suffered heavy damage from the Axis air forces based on Sardinia, and in my opinion what remained of it would have been destroyed in the Sicilian Channel by an Italian cruiser force but for the timely attack by torpedo aircraft based on Malta. Of a total of seventeen merchant ships only two had managed to complete the course. Times had changed.

THE AXIS' AIR FORCES

I believe that during the period I have been describing—up to the middle of 1942—the Axis air forces had reached the peak of their effectiveness. It is, therefore, an appropriate point to say a few words as to why they failed. I have remarked on the very great potential strength of their four areas for air bases; nor did they fail because of any disparity in strength for, though strengths can be misleading, the Axis were, on paper at any rate, the stronger side; neither am I aware of any marked technical inferiority on their part. Yet, from the middle of 1942, the Axis air forces, step by step, were forced back more and more on to the defensive and, in my search for the cause of their failure I go back to Norway where I suspect the enemy only appreciated the defensive value of the air and failed to see its potentialities as an active force. I believe the same to be true of the Mediterranean.

The invasion of Crete was air power exercised in its simplest form and it was based on air superiority. The Axis also put an end to the through convoys in the Mediterranean, and they made the sailing of the Malta convoys extremely hazardous, but in the safeguarding of their own vital shipping you will recall the plight in which Rommel found himself at the time of his attack at El Agheila in January, 1942, and the immense air effort which was withdrawn from in front of Moscow and the English Channel to make the capture of Malta feasible. Indeed, despite the battering of Malta, I witnessed—much to my horror at the time I admit—the growing strength of the air escort to the Axis convoys from two, at key points in the middle of 1941, to as many as four and six, for the whole of the distance by the middle of 1942. The close escort of shipping had become an obsession.

No doubt you have observed how our air forces had stretched out to hit at the vital sea traffic whereby the Axis in Africa were being fed and maintained, but when we look for a similar effort by the Axis practically nothing was attempted. Crete was an air base away from the ebb and flow of the Desert campaign with secure communications to the Continent and within range of the convoys which sailed up the Red Sea to feed the great ports in Egypt; but even when Rommel stood at the gates of Egypt and was within easy range of its congested ports and shipping there is no trace of a definite and planned Axis intention to reach out and to destroy that vital traffic.

An enemy is no better than he is allowed to be, but I believe that had a few thousand tons of bombs been dropped each month on the Egyptian ports combined with an offensive against shipping at sea there would have been little hope of an El Alamein. You will realize, I know, that had such an effort been made by the

Axis it would have forced us to divert more and more fighter aircraft from an offensive role to the defensive and more and more bombers from the attack of the Axis ports of Benghazi and Tobruk to enemy aerodromes, but by striking out the Axis was forced on to the defensive. I must add that the shortage of petrol and equipment restricted both the size and the activities of the Axis air forces based in Africa, but I consider that, had the enemy clearly understood the meaning of air power, he would have found a more balanced force of all arms to have been a more profitable weapon; but such a measure would only follow on that clear acknowledgment.

It is here that I reach the essence of the problem. It is clear from the campaigns in the Mediterranean, also from all other evidence, that Hitler and the German General Staff thought essentially in terms of land warfare. In their eyes the *Luftwaffe* was merely an ancillary to the ground forces, and they failed to understand air power even more completely than they failed to understand sea power, nor did they understand how to exercise air power in a strategic sense.

END OF THE AFRICAN CAMPAIGNS

I now intend to trace the influence of air power in helping to bring about the end of the African campaigns. Hitherto, I have tried to show how the new factor of air power had impinged and gradually percolated throughout the exercise of sea power, but I do wish to emphasize also that although air power is an entity in itself, it is interlocking with sea and land power and that all three are inter-dependent.

Rommel, like Moses, had entered his Promised Land, but unlike Moses, he had not solved his problem of supply. Rommel could not fight for long on his captured supplies and the little which arrived by sea. When at sea the Axis convoys were under constant attack by aircraft and submarines based either on Malta or the Middle East, and the shipping which did arrive in Africa was then attacked night after night by the bombers and by a growing volume of bomber attack by day. Similar attacks were made by the light and fighter bombers on Rommel's communications on the land which linked the ports and the area where he was fighting, on his supply dumps, and on all centres of enemy activity; in fact, our Air Forces had established an air superiority over the whole area of the land battle.

The real struggle, however, throughout that campaign was that of sea communications. Here was the vital struggle—the struggle which virtually undermined the Axis position in Africa and so paved the way for a successful offensive on the land. Proof is borne out by the facts. Rommel was starving for lack of oil. Between August and September, 1942, 205,000 tons of shipping had been sunk at sea and of that total 35 per cent. had fallen to the submarines and 61 per cent. to air action.

When the battle of El Alamein opened in the October of 1942, a German source quotes Rommel's losses at sea as 59 per cent., of which two-thirds was petrol. Five tankers were sunk in succession and a story is told of how Rommel, standing above Tobruk, saw the last of his tankers sunk before his eyes at the entrance to the harbour. Herein may lie the reason why the mighty *Luftwaffe* based on Crete were not busy attacking our vital targets in Egypt, as they were devoting much of their time in ferrying petrol to Africa in a vain effort to keep Rommel in the battle. The situation was, in fact, summed up simply and by no less a person than the Commander of the Afrika Korps himself, when he said, "Alamein was lost before it was fought; we had not the petrol. Vast stocks of petrol and material were lying around in Italy and the Italians were supposed to bring them over but they were unable to do it."

As more and more air bases were captured by the Eighth Army in their advance to the West so our air superiority stretched further and still further over the vital enemy ports and sea routes to freeze the enemy movement and to safeguard our own. And at this juncture I wish to lend emphasis to the point that the land campaign had been, and continued to be, a fight for air bases from which the bombers could reach out to Tripoli and then to Bizerta in Tunisia to bring about that same sapping of strength of the remaining Axis forces in Africa as had happened in 1941 and pre-El Alamein. Even before the Eighth Army had reached Tripoli the bombers were striking at the main European ports concerned with the African traffic, namely, Naples and Taranto, and Bari and Brindisi in the Adriatic. And at the time of the battle of the Mareth Line, when the function of the Adriatic ports had been taken over by Naples and the Sicilian harbours, the bulk of the bombing was concentrated on Naples, Messina, Palermo and Bizerta; in effect, the advance of the Eighth Army brought about the freezing of enemy movement and thus eased its own task.

It is necessary, perhaps, for me to add that all Air Forces in the Mediterranean were operated as one weapon—under the control of one man, who is now Lord Tedder. The day and night fighters, long range fighters, day and night bombers, reconnaissance over land and sea and shipping strikers were not separated into little functional and over-specialized packets, but were switched rapidly from one function to another depending on the situation.

In the month of November, 1942, there had been landings on the North African coast. On the day following those landings the Reich-Kommissar for shipping reported as follows: "Field Marshal General Rommel informed me of his opinion on the devastating situation of sea transport in the Mediterranean where things are in a complete mess." In repeating his previous complaint the German Commander-in-Chief wrote three weeks later "It was specially pointed out what consequences would ensue for the continuance of sea transport to Tunisia and above all to Tripoli, if, with the constant strengthening of the enemy in Malta and Algiers, we did not succeed in securing German air superiority."

Finally, sea-borne supplies to Tunisia soon became impracticable. The next step was evacuation. Attempts by a destroyer or two were quickly frustrated as was the last desperate effort by air. By 7th May, 1943, the campaigns in Africa were over, and two days later patrols of destroyers were established to pick up the strays; 248,000 Germans and Italians fell into our hands.

Here, in this climax to the campaigns, there is a victorious air force denying the use of the sea to the enemy. At Dunkirk there was another air force also flushed with victory, but from under its very nose 316,663 were evacuated by a motley fleet of destroyers and civil craft. Mr. Winston Churchill summed up that earlier occasion when he said "Wars are not won by evacuations. But there was a victory inside the deliverance which should be noted. It was gained by the Air Force."

SICILY AND ITALY

The next phase was the defeat of the enemy in Sicily and Italy. I have alluded to the bomber attacks on ports on the Continent of Europe and in Sicily, but as soon as our air bases were within range, and before the fall of Tunisia, the fighters and fighter bombers had also joined in that offensive over Sicily, Corsica and Sardinia against aerodromes, defences, installations, road and rail communications, etc. Very few enemy merchant ships of any useful size were found at sea after the middle

of 1943, in fact small craft of a thousand tons and less were chased and sunk in daylight when travelling close inshore in the Gulf of Genoa, and later when our air forces were established in Italy, the same conditions applied in the Adriatic—indeed, those operations soon resembled a hunt for rats.

In the preparatory phase to the invasion of Sicily, Messina was selected for specific air attack and then the railways in southern Italy, and as a result we now know that the traffic across the Messina Straits for the month preceding the Allied invasion was 19 per cent. of the monthly average for the previous year. As the battlefield moved northwards to Salerno, the Cassino Line, Anzio and then the pursuit of the Germans to the Gothic Line, the main weight of the attacks was on land communications. The railway targets were the marshalling yards, repair facilities and bridges, and in consequence the capacity and the efficiency of the Italian railway system was seriously reduced. By March, 1944, traffic could only move South on the Florence, Arezzo and Rome line, and even that was severed at some points. But by that time the policy of the Germans had been limited to blocking the advance northwards, and they had to be content to move a few trains each day to supply their armies. Further attacks did little to stop such a small volume of traffic.

Generally it is true to say that while bombing did not prevent the enemy from moving from place to place within the limitations imposed by the transportation at their immediate disposal, it did, nevertheless, cripple the railway system. The normal peacetime capacity of that railway system was far in excess of military requirements, but as a result of the bombing even those demands could not be met in full.

AIR OFFENSIVE ON GERMANY

Until the Autumn of 1943 the use of the medium and heavy bombers had been determined by the needs of the sea, land and air campaigns. But in the last quarter of 1943, those aircraft began to reach out and to join in that battle which was described by a German Staff Officer at a lecture in Berlin in the beginning of 1944 as "The decisive battle with the Anglo-American Air Forces which is being fought out over our vital living space." It was the same struggle which had been fought without remission and with ever increasing intensity since 1940 by the bombers based in Britain.

I have not the time to trace the bomber offensive which followed nor do I consider it appropriate to a talk on air power in the Mediterranean, but I would like to make one observation. As the Allied Armies moved to the West from Egypt and to the East from Morocco and Algeria to uncover air bases, so did the range of the Allied aircraft spread over North Africa, the Mediterranean, then Sicily, Italy and the Balkans. It was like a paralysis of the limbs spreading to the body and eventually not only threatening but destroying the very heart itself. We are all aware that the whole of the body of Hitler's Germany could not be reached from our air bases in Britain, but when the air bases in Italy had been captured by the Allied Armies there was not one bit of it beyond our reach.

PROTECTION OF SHIPPING

There is just one last aspect of air power in the Mediterranean which, owing to its vast scale and vulnerability to air and submarine attack, deserves a word or two: I refer to the protection of our sea communications. The method which was evolved in the Mediterranean was to ensure that the coastal waters were covered

by radar so that early warning could be obtained of the approach of enemy aircraft and the fighters scrambled to engage them. Fighters were moved from base to base, either East or West along the Coast, depending on the movement and locality of the convoys and, provided the radar coverage was adequate, the communications were rapid and reliable, and that convoys were less than fifteen miles from the Coast, the organization was efficient, effective and economical. As a rule the ports were strengthened in radar coverage and fighters were tied to their defence. Eventually, the whole of the African Coast from West of Oran to East of Alexandria was covered by radar.

I have said that I thought the peak of the Axis air effort was about the middle of 1942, but I did not intend to suggest that thereafter it could be ignored. Far from it. Before the invasion of the Continent the Axis air bases on Sardinia, Sicily and Crete flanked our sea communications, and the task of protecting them was as arduous as it was exacting; furthermore Axis submarines were also a menace and all our major convoys were given air escorts.

The Mediterranean was re-opened for through traffic less than three weeks after the capture of Tunisia, but despite the bombing of the enemy aerodromes the passage of the convoys was fiercely contested. On 26th June, 1943, for example, when a major convoy was passing through the Sicilian Straits, over a hundred aircraft flew out from Sicily to attack it, but fortunately only one ship was damaged. So gradually, with the improvement in radar coverage and land communications in Tunisia, the Axis began to find the attack of convoys in the Sicilian Straits to be more and more expensive in casualties with less and less to show for their efforts.

I do want to emphasize the vast quantity of shipping which moved in and out of the Mediterranean at the end of 1942 and the extent to which all the ports were crowded with shipping: on the Lake of Bizerta, for example, it scarcely seemed possible to drop a bomb without hitting a ship. Nor must it be forgotten that the invasions of Sicily, Italy, South of France, and elsewhere in the Mediterranean were mounted from ports in that Sea. In order to appreciate fully that happy state, we need only to cast our minds back to those black days just twelve months earlier, when, of a total of seventeen merchant ships which set off on their course, only two arrived at their destination. The solution of that problem had rested in the capture of air bases by the Allied Armies to extend the range of our aeroplanes and in the product of the unseen war by the bomber and the seen war by the fighter.

As might have been expected with such a wealth of targets, the Axis made the greatest efforts to attack them. Between 1st April and the end of September, 1943, sixty-three attacks had been made on the North African ports with a total of 1,047 aeroplanes, with severe damage to seven ships and minor damage to eight more. But the most serious threat by far was from a German anti-shipping strike based in the South of France which began operating in the August of 1943, and I always think it fortunate that it was not based on Crete some two years earlier. The strike could reach any convoy at sea from the island of Alboran at the entrance to the Mediterranean to just West of Cape Bon, and it was extremely well trained and operated. Twenty-five attacks were made on convoys at sea with a total of 646 aircraft, seventy-nine of them being shot down by our fighters and four by ships' guns; but our total losses at sea as a result of those attacks were fourteen merchant ships, three transports and two destroyers sunk, and eleven merchant ships and two destroyers damaged.

I must point out, however, that the crux of the problem of defence lay in the

answer to ship-miles to ships sunk. In April, 1943, 30,444 ship-miles were travelled by ships in major convoys for every ship sunk; twelve months later the figure had improved by a factor of fifty—one sinking for one million and a half ship-miles.

CONCLUSION

In conclusion I want to make five points.

First: if we omit "V" and atomic weapons, every aspect of war is clearly exemplified in the campaign in the Mediterranean, and in particular the functions of sea, land and air power—their interdependence and also their unity. It is perfectly true, of course, that every aspect of war is also exemplified in the later stages of the war, but I suggest that in those dazzling days of military plenty they are not so easily discernible.

Second: the campaigns in the Mediterranean show that in areas where air superiority is not in dispute air power will control the sea communications and as an example of that conclusion there is the colourful Axis operation which ended in their capture of Crete. But, on the Allied side of the campaigns, I think the examples are even more vivid and more striking because they illustrate, phase by phase, how the aeroplane asserted itself, first as a powerful factor in contesting control in areas where air superiority was in dispute, such as in the Central Mediterranean in 1941 and 1942, and second, when it became the predominant factor in the control of sea communications.

Third: the contest on the land centred around the struggle for air bases to obtain that degree of air superiority which alone could give the initiative and freedom of movement to our sea, land and air forces. The events in the campaigns demonstrated how air power reached out to the vitals of the enemy as more and more air bases were captured by the Allied Armies. First there was the gradual but certain starvation of the Axis forces in Africa of the very means of making war; then the undermining of resistance and the freezing of enemy movement on Sicily and Italy to prepare the way for our Armies until the whole of Hitler's Germany lay exposed to attack from the air bases in Italy or in Britain.

My fourth point is that air power has become the one outstanding and the one dominant factor in the World of to-day. We are prone to remember the lush air superiority days of the middle of 1943 onwards and to forget the early period of the War when we were circumscribed in what we did, and we also forget that the air superiority enjoyed by us after 1943 was far greater than that enjoyed by the Germans at the beginning of the War. For that reason I have given the earlier days a prominence in my lecture. But the battle for air superiority must be fought and it will require time, and a future enemy will also be concerned with that factor and he will hope, like Hitler, for a quick decision.

And last: the campaigns in the Mediterranean show very clearly the real extent of our gloomy position in the middle of 1942, and then—the turn. It had taken us three years to gain the initiative. Looking into the future, I find it hard to believe that we will be given that period of grace again. Captain Mahan says "It behoves countries to see to it that they are strong enough to gain time." As I do not see this country, or indeed any other democracy, maintaining adequate armed forces in peace time, I suggest the answer for the future is: first, to be more selective in the allocation of our national effort to military defence; second, to pay more regard to the principle of economy of force; and third, to keep the component parts of the national war machine properly balanced, united, efficient, and able to strike—instantly and decisively.

DISCUSSION

GROUP CAPTAIN C. E. CHILTON, R.A.F. : I should like to ask the Lecturer two questions ; first, would the retention of Crete during the Mediterranean Campaign have been an asset or a liability, in his opinion ?

The second question is in respect to the use of air forces in association with seaborne targets. The Lecturer has pointed out that the success of Allied air power in the Mediterranean was partly due to their flexibility in switching from one role to another. Was there not, however, a danger of aircrews who were unused to operations over the sea making grave errors in identification when switched to co-operate with the Navy against enemy shipping ? Could the Lecturer say what steps were taken to ensure that " unfortunate incidents " were avoided ?

THE LECTURER : It would have been much to our advantage to have held on to Crete. Crete would have made a far bigger Malta, and by linking hands with Malta, I cannot see how the Axis could have run their convoys across to Africa ; furthermore, I consider that air power at that period of the War would have had a great effect over the whole of the Balkans.

With regard to switching air forces from one role to another : it has its dangers when our own surface forces are operating in the same areas where the enemy is to be found, and there were a few mistakes in the Sicilian Channel. The difficulty at that time was poor land communications and the passing of timely information to the enthusiastic fighter and bomber pilots, but with good briefing all the dangers are remediable.

CAPTAIN R. M. DICK, R.N. : The Lecturer has shown very clearly the importance of air superiority, and I am sure no naval officer who served in the late war would do anything but most heartily agree with every word which has been said about that ; but I think one has also to bear in mind the whole time the sea side of the picture. If I may stress that a little it seems to me that we should remember that, despite the crushing air superiority which the Axis had, we could still use the sea. Amongst other operations we had to carry out at that time, was the evacuation of our Army from Greece, and afterwards from Crete. Those operations were, I think it should be remembered, carried out in the face of a considerable enemy fleet and at a time when our air forces were woefully short for the task they had to undertake.

During a happier time later on when we had powerful air forces, the same position obtained in that the invasion of Sicily and the ultimate entry into Italy had to be carried out in the face of a large Italian Fleet still in being. There was also the final phase in Tunis ; there was a considerable sea element in that as well.

The Lecturer has referred to the victorious Air Force at the close of the North African Campaign and how true that was ; but I think it is only fair to remember that it was backed up by mine laying, by submarines, by coastal forces and by the ships working from Malta. All those operations were carried out in close partnership with the Air Force, and I should like to stress that you must essentially have that other half in the picture when dealing with sea communications.

THE LECTURER : Thank you very much for what you have said. I agree with every word of it.

COMMANDER A. R. HEZLET, R.N. : I have two questions to ask the Lecturer. The first deals with the system of command of the forces engaged in " Anti-shipping." At Malta we had submarines, surface and aircraft, as well as mine-laying craft—all engaged on anti-shipping operations, and they were generally controlled by different authorities. In the Lecturer's opinion, would it have been an advantage if the whole of the anti-shipping campaign had been combined under one command.

Secondly, I should like to know something of the effort involved in achieving the anti-shipping results. There were ten submarines based at Malta and under one thousand men were employed in maintaining them. How many men were required to maintain the anti-shipping air force ?

THE LECTURER : I have described Lord Tedder's method of not tying up our forces

into small and specialized packets. In the Mediterranean the Commanders-in-Chief sat in Committee and gave their separate instructions after discussion with each other; there was, therefore, a joint plan in the attack of shipping. It is true to say, I think, that the sailors and airmen in the Mediterranean worked in unison and towards one common end and, furthermore, they planned and gave instructions from one joint operations headquarters.

Regarding the vexed question of manpower at Malta: 240 aeroplanes were operated by 2,500 men as a rough average. But those few men not only operated the aeroplanes but repaired them and also manned the radar, operations rooms, etc., in effect one man in Malta did the work of at least five in Britain.

GROUP CAPTAIN B. S. CARTMEL, R.A.F.: Could the Lecturer say a few words about the part played by Photo Reconnaissance Wings in North Africa, and how they linked up their operations with the Reconnaissance organization operating latterly from the United Kingdom?

THE LECTURER: The whole of the anti-shipping campaign was based on a very careful study of all enemy shipping movements. Eventually we came to know every ship connected with the African campaign, where it was and what it had been doing, in fact we studied the problem as closely as a biologist would study the life and habits of the cabbage butterfly. This study was only made possible by the excellence of our photographic reconnaissance: we have but to contrast the fighter armada to escort Axis aircraft when photographs were required of Malta with that of ours when our aircraft, alone and unescorted, would take photographs of Naples and Taranto two and sometimes three times a day.

THE CHAIRMAN

It was said a long time ago that the man who controlled the Mediterranean controlled the Earth, and although in these days that may be rather an overstatement, the last war, I think, provided us with a classical example of its truth. You will remember that when we regained control of the Mediterranean in the early days of 1943, the path of the Axis gravitated to disaster. It is a saddening and perhaps humbling lesson to reflect that, with the lessons of history so clearly before us, the Services were unable to reach a common doctrine in the years immediately preceding the War as to the manner in which the war in the Mediterranean should be fought.

Malta, one of the key factors in the situation and, as the Lecturer rightly called it, a battle winning factor, was, at the outset of the Italian war, completely devoid of air defence, and in this area, where a glance at the map will show anyone that air and sea operations would be all important, if not vital, arrangements for co-operation between the naval and air forces were, to say the least of it, markedly feeble, and it was only after bitter experience that we established that close co-operation which was essential to success.

The Mediterranean campaign presents us with an open book in which he who runs may read.

At the start of the War we had complete control of that sea. We passed shipping through it unhindered to the Far East, the Middle East, and so on; but we lost that control. Why? The reason was, of course, that we lost the coasts and land bases which were essential to provide air cover for our convoys, and while the great story of Malta shows us a perfect example of the exploitation of an advanced base on the enemy's threshold by air and sea forces working in combination, we must remember that at one time that base was contained and almost destroyed—that base which was vital to our air and sea operations. Whenever the fluctuations of war gave us the "Benghazi Bulge" we were able to carry the war to the very doorstep of the enemy. When Crete and Libya were denied to us, Malta was brought almost to extinction and our attack on the enemy to its lowest point.

In the same way in the West we could reach Malta, albeit with difficulty, but had the whole North African coast fallen into enemy hands we should probably have lost the

Mediterranean, certainly Malta, and maybe the War. Looking at it in the reverse way, once we had secured North Africa and Libya we were able to complete our air cover and in a matter of a week or two the Mediterranean was open and not only did we control that sea but also virtually denied it to the enemy.

The Lecturer has very rightly stressed the interdependence of each Service on the other two, and you will see from the story of the Mediterranean how that interdependence has its very roots in the security of sea communications. All through history Britain has depended upon sea communications. I hope that is not being forgotten at the present moment in high circles, and that the security of those sea communications in these days is the concern of all three Services. The cycle, I think, is quite clear. If you wish to win a war you must control the sea. If you wish to control the sea you must control the air, and if you wish to control the air you must hold or capture the necessary bases—which brings in the Army. If you wish to hold and supply these bases you must see that your sea lanes are secure, and that completes the circle.

Therefore, I think in peace time our vital task is to establish and maintain bases adequate to our war strategy, and the first thing we have to do if war breaks out is to see that those bases are securely held, and that the sea lanes to them are open to us. As I have already said, that is the task of all three Services.

To-day I think we shall carry away two impressions. The first is the great achievements of the air forces in the Mediterranean, and the second is how those great achievements dove-tailed into those of the other two Services, and how the completed pattern thus paved the way to victory.

In conclusion I should like personally to express my pleasure at taking the Chair to-day at this lecture given by my old friend in both the very bad and very good days in the Mediterranean. He was one who did a tremendous amount to establish close co-operation between our two Services. There was one other I would mention in that connection, and I am sure the Lecturer would be the first to agree with me, and that was Group Captain Scarlett Streatfield, as he then was, who unfortunately lost his life later.

You will wish me to thank the Lecturer most heartily for his very interesting lecture and, at the same time, wish him every success in the important job he is about to take up.

(Applause.)

The vote of thanks to the Chairman, proposed by Captain W. W. Davis, R.N., was carried by acclamation.

LINES OF COMMUNICATION, THEIR DEFENCE AND SECURITY

By BRIGADIER F. A. S. CLARKE, D.S.O., *p.s.c.*

LINES of Communications are defined in Field Service Regulations, Volume I, as:—
“The system of communications in a theatre of operations between the bases inclusive and the rear limit of administration by formation commanders along which the requirements of the army are transported.”

The L. of C. is, perhaps, a greater problem to us than to other nations. In most of our operations we have to land first and then build up our reserves and installations ashore, whereas a continental Power, operating across one of its frontiers, can draw direct from its existing peace-time depots and only needs to form advanced bases when distance makes it essential. The main exception to this, of course, is the Burma campaign which was based on India, but even then the ultimate base was the United Kingdom and involved very long sea communications.

This may be regarded by many as an uninteresting aspect of administration, though its importance is probably fully realized by the majority of experienced officers. The purpose of this paper, which is written mainly from the General Staff point of view, is to show that it is by no means dull and that there are a good many problems likely to affect the smooth working of the system. Furthermore, it is a subject about which one normally hears little; though a grasp of at least the outlines is necessary for the proper study of any operations. For instance, if the conditions of the L. of C. of the First Army in 1942 be considered and compared with those of the opposing Axis forces, the major reason for the failure to take Tunis in the early stages of the campaign will be apparent. Again, was not the objective of Runstedt's offensive in the Ardennes in December 1944 our L. of C. through Belgium to Antwerp?

II

Napoleon is supposed to have remarked: “The secret of war lies in the communications.” Whether he meant a L. of C. quite as we understand it is doubtful. The French armies of his time habitually lived on the country; when they could not, as in the Peninsula and in Russia, they met with disaster. In the latter campaign, Napoleon did order the formation of magazines, wagon trains, hospitals etc., as the army advanced, but the organization was not in fact established and, in any case, it seems that the intention was to fill the depots by marauding.

Wellington, on the other hand, had a very thorough system which is the origin of our existing methods. It was Wellington, too, who made use of sea power to shorten his land communications during the final advance from Portugal to the Pyrenees, an expedient which has been used since on several occasions, notably in the campaigns in Egypt, 1882, Palestine 1918, and North Africa 1941-43. The bases had to be changed in France in 1914 and again in 1940, but in these instances on account of enemy action. No other nation has made such use of sea power or has had to employ such varied L. of C. and transport as ourselves. Under modern conditions, the bases and L. of C. have tended to become more and more static, mainly owing to the enormous quantity of ammunition and stores which have to be accumulated for the armies and air forces, and the immobility of the necessary workshops. Any change of base or line of operations has consequently become more and more difficult, particularly

in view of the time required for organizing the facilities of ports and depots. The change of bases in 1940 was a temporary expedient to meet the emergency which had arisen.

In campaigns between Regular armies the L. of C. is covered by the dispositions of the field formations. This is, in fact, the application of one of the main principles of strategy. There is, however, always the possibility of raids or action by hostile inhabitants, so that the safety of the communications depends on a secure hold on the whole theatre of operations. Even in the simpler days of the XVIIIth Century, anxiety for the communications was a dominant factor. The armies relied on sieges and elaborate manœuvre rather than on battle, and were dependent on magazines, labouriously collected, and the establishment of facilities for baking bread—often the only ration issued. There was a great change during the wars of the French Revolution; Napoleon aimed at decisive action and the destruction of the enemy's forces. He endeavoured to attain greater flexibility by living on the country but, as mentioned above, this was not always successful.

The use of railways in the XIXth Century increased the speed of concentration in the theatre of operations and the numbers that could be adequately supplied. This entailed a certain amount of rigidity, except where a close network existed and, moreover, railways are a more vulnerable means of communication than roads. The concentration and maintenance of the masses on the Western Front which faced each other from Switzerland to the Belgian coast in 1914-18, was made possible by the network of railways in France and Germany and, incidentally, by the development of modern methods of preserving rations and tinning meat.

At the beginning of the War of 1939-45, new developments of older threats to the communications were expected. These were:—

- (a) Air attack
- (b) Raids by armoured forces
- (c) Airborne landings and raids.

On account of (a), considerable dispersion of installations was made, and the original base ports of the British Expeditionary Force were located as far West as possible instead of at the Channel ports as in 1914. As it turned out, there was little or no interference with our L. of C. in France until the German offensive started in May 1940, which was rather surprising.

Rommel made an armoured raid into our L. of C. in the Lybian Desert during the operations in November 1941, but the effect seems to have been even less than some of the cavalry raids in the American Civil War. There were, however, anxious moments in the Tunisian campaign when Rommel, in February 1943, suddenly attacked with two *panzer* divisions and drove the American II Corps on the right of the First Army back from Sbeitla and through the Kasserine Pass. One of his columns turned North towards Le Kef and the other continued in a westerly direction towards Tebessa and Constantine, which was the road and rail centre of Eastern Algeria. British troops were brought down from the North and stopped the right column at Thala, a few miles South of the First Army's L. of C. at Le Kef, and the enemy then began to withdraw. Rommel's original intention was probably to strike a heavy blow at the American II Corps in order to gain time and space for his operations against the Eighth Army in Tripolitania, but he took advantage of his early initial success to try to cut our L. of C. by a raid. Had this succeeded, and been followed up, our hardly won positions in Tunisia would have had to be given up.

The problems and the effect on operations of a long L. of C. through practically

undeveloped country in the Tunisian campaign and that in Cyrenaica and Tripolitania are well worth study and comparison with the conditions in North-West Europe and elsewhere during the last war. In the latter connection, too, the effect of Allied air attack on the German L. of C. prior to D-day and during the subsequent advance should be appreciated.

III

In this section it is proposed to outline and discuss some of the "G" problems which arose on the L. of C. in North-West Africa and Italy. These may seem very minor matters, but they were important because failure to deal with them successfully would have had serious and cumulative effect on the smooth working of the system.

GENERAL CONDITIONS IN N.W. AFRICA AND ITALY

The conditions in Algeria were peculiar. After a token resistance to the landings, the French became Allies, but behind the scenes there were fierce political struggles, Giraud certainly succeeded in getting the Army on a war footing and a revival commenced, but he was at loggerheads with de Gaulle and there were to the end many Vichyites—not only civilians.

The Americans were in Morocco; they also worked the port of Oran and ran the communications West of Algiers. The British were responsible for the eastern zone, i.e., from Algiers inclusive to the First Army rear boundary in Tunisia. There was a Headquarters L. of C.; the zone was divided into Base and L. of C. Sub-Areas; and the whole was organized and administered as laid down in F.S.R. Volume I, though with some minor modifications. The main base was Algiers, but the smaller ports of Bougie, Philippeville and Bone to the eastward were also utilized as base ports. Allied Force Headquarters was at Algiers. There was practically only one through trunk road from Algiers to the Tunisian frontier, but branches ran to the above mentioned ports and some of these were linked. The distance from Algiers to Tunis by road was 560 miles. There was a single-track, inefficient railway from Algiers to Tunis with branches to Bougie, Philippeville and Bone, as well as metre gauge offshoots to southern Tunisia.

There was considerable enemy air activity over the L. of C. in the early days, but attacks were confined mostly to the ports, Bone in particular being raided over two hundred times. All anti-aircraft and coast artillery was directly under Allied Force Headquarters where there was a special directorate for the purpose, so that, apart from security and local administration, these units did not come under the L. of C. area commanders.

After the conclusion of the Tunisian operations, Algeria and Tunisia became advanced bases for the Sicilian and Italian campaigns.

In southern Italy, A.M.G.O.T. took over the administration as the Army advanced northward. This body was later renamed Allied Control Commission. Conditions appeared chaotic in the towns, though the peasants worked in their fields as if nothing had happened. After the first landings, the base ports were Naples, Bari and Taranto; subsidiary ports were also used as the advance went on. Naples was worked by the Americans and Bari and Taranto by ourselves. The provision for anti-aircraft defence was the same as in North-West Africa. In this campaign, Bari was successfully attacked by the *Luftwaffe* in December, 1943, an appreciable number of ships being sunk in the harbour and the fairway nearly blocked.

In both North-West Africa and Italy there were many factors which affected

the security of the L. of C. The following cropped up from time to time—doubtful Allies, rival factions, inefficient police, difficulty in getting reliable information, sabotage, inefficient civil administration and, particularly in Algeria, touchiness as to sovereignty.

ECONOMIC FACTORS

Economic conditions were the root of most of the troubles. In both Algeria and Italy there were acute shortages of food and the everyday necessities of life. Large numbers of Arabs and Italians were employed by the Allies at the base ports and in various installations, but there was little on which they could spend their earnings. As usual, plenty of people were out to make easy money and the result was a flourishing black market in both countries which the Governments either could not or would not suppress. Even local products, olive oil for instance, were not available in the normal manner. The black market prices were such as to tempt the inhabitants to take great risks to acquire goods by theft, raids on depots, burglary of billets and purchases from troops.

The latter had a most demoralizing effect and led to "flogging" of kits (particularly by reinforcements), theft of rations, clothing and stores, and also traffic in weapons. Deserters lived by illicit trade, and in Italy there were actual gangs of Allied deserters and Italians who lived by robbery and the black market. These gangs were expert car and lorry thieves and there is little doubt that a proportion of them were criminals in peace time. The whole question of illicit trade by our troops was dealt with by "A" Branch so will not be discussed further here, but the quantity of valuable stores, etc., lost through the depredations of Arabs and Italians was very large and the counter-measures became largely a "G" matter.

SECURITY

In Algeria, the French were responsible for the maintenance of order and, of course, for the administration of the country. By agreement, they also undertook the guarding of bridges, etc., on the L. of C. for which we had no troops available at all. There were one or two cases of *saboteurs* being landed by aircraft in Algeria, but they were soon caught by the French native troops or by the Arabs, who received a reward for doing so. There were one or two very vulnerable points on the L. of C. to Tunis, one in particular where the road and railway ran side by side through a gorge. But no attempt was made at this spot, though a break there would have cut off Algiers from Tunisia.

In 1944, Allied Control Commission began to hand over province by province to the Italian Government, who became responsible for the maintenance of law and order. Italian troops, now Allies, were placed under the Area Commanders on the L. of C. who, in the event of trouble, would have to support the local Italian civil power.

Apart from any question of hostile action or internal disturbance, however, there was the big problem of the security of the depots, installations, transport, billets, stores convoys, supply trains and docks against theft or sabotage. The Arabs and Italians were cunning and expert thieves, though it is difficult to say which were the more skilful. The Arabs at times made definite raids and on occasion used fire to cover movement. They were very patient and thorough, used small boys to watch the habits of the inmates of camps, depots, etc., and were quick to take advantage of raw troops or new units. Our young conscripts were much too trusting and friendly until they learnt by experience, when it is sometimes too late.

Special measures had to be taken to prevent transport being stolen, and in Italy wired and guarded car and lorry parks had to be provided in the towns. Dock workers had to be searched and the docks themselves had to be carefully watched. Convoys were robbed unless the personnel were always on the alert. If a single lorry halted anywhere in Algeria, numbers of Arabs would appear as if by magic. One of their methods was to engage the driver and mate in conversation, whilst small boys stole what they could from the back of the vehicle.

On the railways in Algeria, sealed trucks were pilfered—the thieves tore off the roofs and got inside—in spite of the fact that the trains were supposed to be guarded. There is little doubt that in many cases the railway officials were involved, because trucks containing attractive stores were often unaccountably detached from the trains and shunted into sidings at lonely stations. This was eventually got under control, but only at the expense of much effort and the employment of British troops as train guards. It must be remembered that the black market had its supporters and collaborators at all levels, hence the difficulty.

The ordnance and supply depots were either in existing permanent buildings or in specially constructed hutments. Ammunition, petrol, oil and R.E. stores were partly under cover and partly in the open. There was necessarily a good deal of dispersion and some of the depots covered a large area. The base ammunition depot at Bari in 1944 held about 120,000 tons of all natures and was dispersed along the sides of roads and tracks running mostly through olive groves. The total mileage covered was 120! It is obvious that large depots such as this cannot be guarded by having sentries all round them—there would never be enough troops.

The most popular items, apart from food and cigarettes, were blankets, sheets, cloth of all kinds, tents, parachute silk, and silk from various ammunition components such as the bags holding 25-pdr. charges. In Italy, explosives and stripless machine-gun belts were also taken. It was discovered in one dump, when loading a consignment for the forward area, that tens of thousands of cartridges had been removed from the stripless belts and put back loose in the boxes which had then been carefully restacked. This was thought at first to be deliberate sabotage, but afterwards it was found that the belts were unravelled and the material used for making string.

METHODS

Every Area headquarters, unit depot, etc., must have a defence scheme, based on its own resources and designed to meet all possible contingencies. A warning system is also necessary. The arrangements should be frequently revised and as far as possible practised and tested.

There is always a tendency under such conditions to disperse the available troops in penny packets and for all and sundry to ask for guards for their own protection or to advertise their supposed importance. This must be avoided and the principle of economy of force applied. Troops employed on static defence should be reduced to the minimum, and the balance kept and trained for mobile columns or special tasks. Units, including the services, have to be made to understand they are responsible for the security of their own personnel, arms, equipment and stores at all times and must find their own guards. Special measures, however, are necessary for the security of large installations, and the necessary extra troops have to be provided under Area arrangements. Generally speaking, patrols are always the most practical form of protection for large depots, etc., used, if possible, in conjunction with a few static guards, provided by the unit working the installation.

Care and vigilance are essential and security measures require revision from time to time. For instance, the positions of sentries and the routes of patrols ought to be changed frequently and, in any case, patrols should not go out at set times daily. Sentries must be given definite orders as to opening fire.

Police dogs were used from time to time to replace sentries and patrols at night, but there were never sufficient available for their permanent use, especially as they could only be worked for short periods. One disadvantage was that sentries and patrols had to be withdrawn from the area in which a dog was put to work. There is no doubt that the Arabs noticed these factors, moreover they appear to have had an excellent "bush telegraph" and were seldom caught napping. The experience is that secrecy is essential, as unless surprise is attained results are unlikely.

Some extracts from training memoranda are given in an appendix to this article. They deal with the protection of billets, depots, etc., and are the result of experience in both Algeria and Italy. These not only give an idea of the conditions and problems which had to be faced at that time, but may also be of some use to officers who have had no experience in these matters.

A defensive outlook alone is insufficient, preparation must be made for offensive action to deal with enemy airborne troops, civil or prisoner of war disturbances and small operations such as counter-raids. It is considered that operation instructions for columns should be prepared in advance and issued to all concerned, and further guidance as necessary given by General Staff memoranda. Experience shows that any action of this nature must be controlled and planned as a military operation, and all officers must be acquainted with the object and methods to be adopted. British troops co-operating with Allies must always be under the command of a British officer, whoever is in charge of the operation. The troops employed must be given adequate orders, particularly as to the amount of force and the nature of the weapons which may be used.

Counter-raids on villages or searches of dwellings to recover stolen property, etc., must not be carried out on the initiative of individuals. The actual searches or the apprehension of suspects, should be carried out by the Corps of Military Police, but the local police should invariably be present. Troops must only enter the houses in support of the police and will normally only be used as "stops" and as a reserve. Strict discipline is absolutely necessary, as every effort may be expected by the other side to discredit the troops after the event. Surprise is essential, so every care will be necessary to ensure secrecy as to the objective.

CIVIL DISTURBANCES

In Algeria, the action necessary was simply to protect our own personnel and stores, as the authorities were unlikely to require any assistance. But in Italy the situation was entirely different as, after the Italian Government had assumed control of some of the southern provinces in 1944, L. of C. Area Commanders were required to support them if necessary. The situation was thus rather complex. Instructions were issued reminding units of their responsibility for safeguarding their own personnel and stores without further orders, but also pointing out that other action was not allowed, except in grave emergency, without reference to Area or Sub-Area Headquarters. Among other things, all concerned were warned that care should be taken that the conduct of British troops in such circumstances gave no grounds for subsequent complaints, and that this could only be assured by discipline and close supervision on the part of officers and N.C.Os. Furthermore,

that representatives of the civil power and/or Carabinieri should always be present when action had to be taken. The principle of minimum of force was emphasized and orders given as to the opening and control of fire. It is absolutely essential that officers and N.C.Os. are aware of their powers and responsibilities in such conditions.

It is obviously neither desirable nor possible to issue foolproof instructions which can and will be followed on every occasion. Each case will always have to be treated on its merits in accordance with principles, knowledge, common sense and the policy laid down by higher authority.

CONCLUSION

There is an infinite number of possible situations on a L. of C. An attempt has been made in this paper to draw attention to some of them and the methods adopted to cope with them. It will be appreciated that good troops are essential for garrison duties on the L. of C. Many of the security problems which arose in Algeria and Italy are similar to those encountered in what is known as "Imperial Policing," but with additional complications, including that of operating in another nation's territory.

In future, owing to the development of new weapons, greater all-round dispersion and added flexibility of the L. of C. will be essential. This will not only cause an administrative problem of great magnitude but will intensify the difficulty of affording protection, and may necessitate the allotment of special mobile troops to the L. of C. In any case, whenever economic conditions are such that the black market flourishes, similar problems to those caused by it in Algeria and Italy will arise again.

APPENDIX

PROTECTION OF DEPOTS, BILLETS, CAMPS, ETC., ON THE L. OF C.

1. General—

The characteristics of the "natives" should be studied. The "friendly inhabitant" who hangs about a camp, depot, etc., may be regarded as up to no good. The value of a *suspicious mind* and constant alertness should be impressed on all ranks. Additional precautions must always be taken to safeguard attractive stores.

2. Guards—

It is essential that all guards be provided with written orders. These will include instructions as to the use of weapons. The actual site of the guard and the sentries' beats depends on a variety of circumstances. The following may have to be considered :—

(a) Surrounding terrain—vineyards, olive groves, water-courses, etc., which afford possible lines of approach or escape.

(b) Parts of buildings where entry can be forced through windows or a weak roof.

(c) Use of obstacles and mechanical devices.

In connection with (c), it must be remembered, however, that wire obstacles are merely an aid to protection—they must be watched or patrolled, as they usually serve only to delay determined intruders. All wire fences should be inspected

when the guard mounts and occasionally during the hours of darkness to ascertain if they have been cut. Spare material should be kept in guard rooms to mend gaps.

3. Sentries—

The ceremonial type of sentry is useless. What is really required is an alert and quiet prowler. All sentries must, however, be regularly posted by an N.C.O. and will be visited at irregular intervals, particularly between the hours of midnight and daybreak.

Sentries will be taught :

- (a) The proper method of challenging. (The word "Halt!" is generally sufficient and should be given as late as possible.)
- (b) Never to assume that there are no thieves about because there have been none for some time.
- (c) To use their eyes and ears.
- (d) That they must be vigilant and inquisitive.
- (e) The value of surprise. The sentry must understand he is there to surprise the intruder and not *vice-versa*.

4. Patrols—

In the case of installations covering a large area, patrols are the most practical form of protection, used if possible in conjunction with a few static guards. They are also useful for surprise visits and temporarily to thicken up static guards, or for a special purpose such as an ambush. It will often be advisable to warn static guards if a patrol is operating in their vicinity.

These patrols must work as in a tactical operation, and endeavour to attain surprise. All ranks must know the object and plan; but, to ensure secrecy, these should not be divulged until the last possible minute. The following are also essential :—

- (a) Silence.
- (b) Speed.
- (c) Use of ground and cover.
- (d) Cunning.

Mechanical transport will often be necessary to move a patrol to the area in which it is to be engaged, but care must be taken that it is used in such a way as not to compromise surprise.

STANDING ORDERS

By MAJOR H. J. COOPER, R.A.S.C.

THE prominence given in Field Service Regulations, the Training Manuals and at Colleges and Schools of Military Instruction to operation orders and their supplements has obscured the importance of the other means by which command is exercised in the field. To ensure that routine orders and operation orders may be kept within reasonable compass, much of the daily cycle of military administration is reduced to a command denominator and published as Standing Orders. Experience shows that at the outset of a campaign unit commanders are rarely provided, at least during the opening phases, with a skeleton set of orders upon which they can base the daily routine of a unit in process of mobilization. It is left to the initiative of the first arrivals to provide accommodation, messing, stores and equipment rules during a period of mounting stress.

The object of Standing Orders is to adapt existing regulations to local conditions in order that repetition may be avoided and that the duties comprising the administrative cycle may be reduced to a drill. To effect this competently requires a knowledge of principles and a certain ability to apply them. In this respect the framer of orders governing the day-to-day details of administration is more fortunate than the teacher of tactical doctrine, for an administrative process is capable of accurate reproduction to almost any scale, but the minute representation of battle conditions can but rarely be undertaken. Nevertheless, the first thing is to learn the doctrine. The skeleton of it is to be found in Field Service Regulations, and the flesh and blood with which to clothe it is hidden in the various training manuals, memoranda and pamphlets. It is thus plain that the first duty to which the student must address himself is the study and use of General Staff publications so that the conditions of the campaign or situation for which the orders are framed may be understood. To this study the technique of approach is as important as it is to any tactical problem. The latest edition of the publication must be studied and compared with the previous edition and allied publications, in order that the effects of time and progress upon principles may be understood. Should the principles be altered or deflected, then the consequent effect upon the doctrine must be assessed.

When it is firmly established, the application of the doctrine to the solution of the various problems confronting the commander must be given attention. It is here that the importance of method is first apparent. Where method is seen, success may at once be predicted.

The laying down of a methodical system of control of the activities of the unit is the first responsibility of the unit commander, and the elements of this system are to be found in Standing Orders. The lay-out¹ should provide a grid giving room for amendment and expansion.

The Preamble would contain a reference to the authority under which the Orders are published, the table of contents and any preface which might be thought desirable. A table of organization showing the chain of command and responsibility would follow.

Powers of command and times of parade comprise the first section. It lays down the compass of control of the unit personnel.

In the second section the management of the man is treated in all its aspects

¹A specimen lay-out is given in the Appendix.

from the dress in which he appears on parade on joining the unit to the relation it is hoped he will maintain with his Regimental Association when he is finally discharged. It deals broadly with the administrative cycle which covers the daily activities of a soldier from the day on which he is recruited, and proceeds via enlistment, accommodation, messing, clothing, equipping, arming, training, fighting, either to his evacuation as a casualty, which will result in his discharge or his reabsorption by way of a rehabilitation centre or his burial *sur le champ d'honneur*. Prohibitions could be put together in one paragraph so that "Crown and Anchor will not be played" and "Dogs are prohibited" would not be found interspersed among duties concerning the custody of arms and the lay-out of barrack rooms.

The third section. Having arranged for the command of the man, his working parades and his management, a routine governing his work must be laid down. First of all, outside interference must be guarded against and this section, which might be labelled General Routine, would contain security regulations, action on an air raid warning sounding, the dropping of bombs, the arrival of parachutists and the occurrence of fire and its development into conflagration.

In the fourth section the system of office routine is set out; it must be established before the technical routine of daily duty is considered. For a perfect system of control there are four requisites; paper, writing materials, communications and transport. The last named will not however be considered at this stage.

Paper and writing form the raw material of the process of registry, filing, typing, signing and despatching of correspondence, also of the processes of indenting, receipt, inspection, storage and issue, without which neither equipment can be received nor rations procured. The various sizes of paper, envelopes, printed and manuscript forms must be so laid out as to be instantly available and so housed that they may be protected from the weather, since the unit is mobilized for field service where the apparatus and amenities of a static office will not be available. The construction of documents, writing, typewriting and duplicating must also be organized and similarly protected. The safe custody of correspondence and documents must be treated and protected in the same way; without such action records cannot be accurately kept and regularly and punctually despatched.

The mechanical and electrical aids to rapidity of communication which are made available to the unit must be kept in perfect order and the appendices to this section will contain orders for those responsible. The methods of communication by which orders are transmitted in battle will be dealt with in the section devoted to technical routine.

The fifth section. Having now examined the methods by which command is exercised over the personnel of the unit, by which they are raised to and maintained at the highest pitch of efficiency, by which the hazards of war other than those experienced in battle are minimized and by which control from the office is arranged, there remains the technical routine of the unit for consideration. Each fighting arm and service has technicalities peculiar to itself, the permutations and combinations of whose parts are extremely bewildering. To embark upon a detailed examination of them would serve no purpose. The fifth section can therefore only be completed by the technical officers of each branch of the Service specially for its own units.

The word technical is used here in no narrow sense of scientific mysticism but in its original sense—that of making plain the particular intricacies of some art or profession.

The sixth section. The financial liabilities of officers have been removed from

the body of the orders and placed together to form the final section. A survey of Army Council Instructions, General and other routine orders, notes and pamphlets on the care of funds, the protection of coin and specie and the prevention of fraud, all show that the initial causes of loss are twin—lack of sense of responsibility on the part of the responsible officer and absence of orders laying down a proper routine and providing for its enforcement. *A fortiori* it is vital in the opening stages of a campaign, when expansion is rapid and the safeguards of peace-time routine much attenuated, that there is a solid basis of custom, experience and rules shortly but plainly expressed in a section specially set apart in Standing Orders. This framework, solid though it be, must be buttressed by guides for officers, lists of duties of key personnel, and orders for all ranks responsible for important and specific duties. These are issued in the form of Appendices to which reference is made at appropriate places in the orders.

The guides for officers are lists of questions which they are able to ask themselves and in answering them perform a wide variety of checks in their own particular sphere which will ensure uniformity of operation, rapidity of action and certainty of detection of error. They also form a very useful basis of examination for an inspecting officer. Should a commanding officer on leaving his office decide to ask six questions of six different officers in his unit, and should they in their turn ask six different questions of subordinate individuals within their command, and should they after answering them later be required to perform six further checks, then a short visit by the commander will have touched over twelve hundred keys. By this simple method every aspect of command, training and administration can be covered several times each week, and the unit raised to an unexceptionable pitch of efficiency. It has been said that diplomacy without armaments is like music without instruments; it is certain that armaments without training bear a similar likeness.

The lists of duties of key personnel set out in the Table of Organization should be kept on a small board on the table of each individual. In the event of a casualty of whatever nature—leave, sickness, wounds or death—the relief will at once see for what he is responsible and start immediately to draw the relevant orders and instructions and gain contact with his neighbours.

The orders for individuals performing specific duties—orderly officer, messing officer, sergeants-in-waiting, provost sergeant, N.C.O. in charge of the vehicle laager guard, ration corporal and sentry will, in addition to issue as appendices, be posted at convenient points in the unit and be handed as may be required to the individuals.

Many readers—perhaps all—will remember the encounter of Alice and the White Knight and the surprise she expressed on seeing, among the fantastic array of his accoutrements, a mouse trap.

"It is not very likely that there would be any mice on the horse's back," she said.

"Not very likely, perhaps," replied the Knight, "but if they do come I don't choose to have them running all about."

"You see," he went on after a pause, "it is as well to be provided for everything."

In order to do a little one has to know a great deal and to know it well. Inefficiency is after all only competence standing on its head. The soldier like the Carrollian warrior must preserve an open mind, exhibit continually a spirit of enquiry and for every eventuality be continually prepared. In order that he may preserve the fruits of his experience for the instruction of others, Standing Orders provide a convenient repository.

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THE GERMAN NAVY—THE LAST PHASE

By CAPTAIN J. CRESWELL, R.N.

NOW that the Admiralty and U.S. Navy Board have issued the minutes of the *Fuehrer Conferences on Naval Affairs* of 1944 and 1945 it is possible to complete the brief sketch of the German navy's decline which was begun in the last number of the JOURNAL.

It will be remembered that the year 1943 had ended disastrously with the sinking of the "Scharnhorst." This episode was discussed at the Conference on 1st January, 1944. Hitler's comments were less caustic than might have been expected, and he did not blame the Naval Command's plan. His mood was more sorrowful than angry; but with some justification he again harped on his old theme that the big ships were too prone to avoid taking risks.

"The Fuehrer fully agreed with the idea that the Navy should make every possible use of its forces. However, the thing that grieves him, besides the unsatisfactory outcome, is the unanswered question of how the force commander could have made the grave error at 1223 [i.e., his second encounter with Admiral Burnett's squadron] of assuming that he was confronted by heavy ships, when only enemy cruisers were involved. Our battleship, in fact, ran away from cruisers, although it was superior to them both in fighting power and armour. The Fuehrer always suspects that such happenings occur because too much thought is given to the safety of the ships, as in the case of the 'Graf Spee.'"

But it was not only this that had caused disaster. Had the "Scharnhorst's" radar equipment been even moderately effective she would not have closed the "Duke of York" till the latter opened fire on her at 12,000 yards. Considering that German ships had had radar rangefinders since before the War it is almost incredible that they were so ill-equipped at this time. But such was evidently the fact, for we find here that Doenitz had to explain to Hitler that "the engagement had proved that surface ships are no longer able to fight without effective radar equipment. We cannot expect our ships to be very successful in preventing enemy landings, since the enemy has the equipment and is in the position to eliminate our ships beforehand or fight them during the approach." Over a year later, on 14th February, 1945, Doenitz had to explain in connection with the inadequacy of anti-submarine defences, surface and air, in the Baltic: "In the course of the last few years very little progress has been made in radar development." This must certainly have been a great handicap in sea warfare. It was a matter in which Doenitz had striven for unified research and development, a subject on which he had several times crossed swords with Goering.

Although Doenitz claimed that to employ heavy ships in attacking convoys to Russia during the winter darkness was sound strategy, as indeed it was, there seems not to have been much intention to repeat the operation. It is true that the "Tirpitz"—the only fully suitable ship remaining, was still making good the damage inflicted by midget submarines, and that by the time she was again sufficiently seaworthy, not only was Summer at hand but she was once more severely damaged—this time (3rd April, 1944) by dive-bombers from Home Fleet aircraft carriers. But from the discussion that followed this last blow it is clear that little or no further offensive action was intended. Doenitz reported to Hitler that the "Tirpitz" "is to be repaired and remain stationed in northern Norway. This course will be followed even if further damage is sustained. . . . After all the presence of the 'Tirpitz' ties

up enemy forces. The ship will hardly have any further opportunities for action, unless later political developments, such as a falling out between England and Russia, were to bring this about. . . . Aside from the fact that the 'Tirpitz' will tie up enemy forces if left in northern Norway, it would be a mistake to recall the ship to Germany, since that would increase the danger of air raids on German ports."

This showed the German surface navy at its nadir as an offensive force. That it still contained considerable forces of the British Home Fleet is true, but this was not to the serious detriment of our efforts elsewhere. So to arrange matters that an inferior force shall contain a superior is often an important aspect of strategy; but that is always on the assumption that it will facilitate offensive action elsewhere and that the inferior force may itself be used offensively in other circumstances. Here there was no real thought of further action, and when the "Tirpitz" was sunk by Royal Air Force bombers at Tromsø on 12th November, after being moved there because of the threat of a Russian invasion through Finland, the event passes unnoticed in these minutes. Nor could there be any true application of Torrington's oft-quoted words about "a fleet in being," for they had implied that the inferior fleet, though temporarily inactive, would prevent the superior achieving its aim—and in this case the German navy was not preventing us doing anything we wanted to.

The same argument about the importance of tying up Allied resources is frequently put forward in these minutes as one of the essential reasons for continuing the submarine campaign. But here there is usually an admixture of optimism about a return to real success in the future. In fact, as the general situation grew increasingly depressing for Germany, more and more prominence was given to submarine warfare in the thoughts of Hitler and Doenitz as the one ray of hope. In their desperate straits it had the great merit of allowing a large measure of self-deception both about what was happening and about what would happen soon—if only Allied bombers and minelaying aircraft did not wreck everything by making it impossible to bring new submarines into service. With the Anglo-American and Russian armies closing in on land, one could not ignore the fact that German resources were dwindling; but one could still juggle with inaccurate figures about sinkings and losses, and half persuade oneself that things at sea were getting better.

This was done extensively by Doenitz from time to time. On 11th February, 1945, for example, he reported that, though the submarine losses were high, "4.4 enemy vessels, mostly steamships, were sunk for each submarine lost, so that the Commander-in-Chief, Navy, feels that the results achieved justify continuing the operations." In fact the Allies lost eleven ships in January as against seven submarines sunk in the operating areas and five lost elsewhere; and in February fifteen Allied merchant ships were sunk as against fourteen submarines sunk while operating and eight elsewhere. And on 15th February, 1945, he stated that "submarine successes *per* submarine in operational areas amounted to 9,000 tons in December, 1944, and 11,000 tons in January, 1945." He goes on to say that: "These figures are as high as they ever were during the most successful period of submarine warfare." And though he qualifies this by noting that "the total is considerably affected by the small number of submarines in operational areas and the long periods of time required for submarines to get to and from their operational areas," yet his further statement that "at present 237 submarines are being prepared for operational use" creates a most encouraging impression.

But if his figures for tonnage sunk *per* submarine were correct, then the average number of submarines in the operational areas can have been only 6.6 during December and 5.2 in January, which gives a very different complexion to affairs.

In fact there were probably more than that, the tonnage figures being exaggerated, but the number was certainly very small when compared with the great days of 1942. On 13th March, 1945, Doenitz stated that: "Of the 130 operational submarines available in February, 1945, for service in the Atlantic, on the average 64 were at sea; out of this number only about 17 were in the operational zones due to the disproportion existing between time needed to reach the operational zone and time actually spent in operation." This was, of course, because our aircraft had forced the submarines to remain submerged the whole time they were at sea, making their passages by means of *schmorkel* and thus at very low speed. It gives a good measure of the extent to which their potentiality for attack had been reduced.

In addition to the encouragement derived from juggling with figures, there were constant hopes of the better future to be brought about by, first, the use of the *schmorkel* and, secondly, the high submerged speeds of the new submarines which such great efforts, so often frustrated by bombing, were being made to bring into use. These were the Type XXIII—a small submarine for short-range operations, and the large Type XXI—a submarine with Walter turbines which gave it a high submerged speed (but available for a few hours only during each cruise) using a special fuel. Further in the future there were the "electro" submarines which, with the hull of Type XXI, would have a high submerged speed on electric motors with some new form of battery.

The hopes based on "schmorkelling" alone were soon seen to fade. At first it was na encouraging thought that submarines could operate in inshore waters which previously had been far too dangerous. On 3rd January, 1945, Doenitz reports that the old type submarines fitted with *schmorkel* "can achieve success even in waters where German submarines were forced to cease operations more than three years ago, i.e., the Cherbourg area, the Irish Sea, Scapa Flow and Peterhead." And three weeks later: "the allocation of a large number of submarines to this area [i.e., the inshore waters round the British Isles] is justified, all the more so because shipping losses so close to the British coast must be particularly disagreeable to the enemy." But this rather insubstantial comfort was soon dispelled by further experience and consideration, and on 1st March Doenitz states: "It is impracticable to concentrate our submarines in the area of the British Isles, since this permits the enemy to concentrate his defensive weapons in a small area. . . . But the enemy will do everything he possibly can to master the submarine danger in his home waters, and he will succeed more and more in doing so, considering the strength of his anti-submarine weapons. A particular difficulty for directing the submarines lies in the fact that the vessels can report their observations only on their return trip shortly before they enter port, or even not till afterwards. The commanding officers cannot get an idea of the situation in the operational area and cannot draw the necessary conclusions for succeeding operations until very late."

This was a clear admission that the inshore strategy had failed. It had failed, despite the undoubted courage and enterprise of the submarine captains, because it was, in fact, a retrograde move. Even though the ability to submerge continuously was a new and valuable asset, these operations went back to the old slow individual tactics for use against which the asdic had originally been developed. Our anti-submarine craft, with no recent experience of working in shallow water, encountered great difficulty at first, particularly in distinguishing submarines on the bottom from wrecks; but with the vigour and drive of the Western Approaches Command these difficulties were largely overcome. Though a submarine newly arrived might get in her blow at a convoy, the chances of her subsequent survival became less and less.

In April, 1945, thirteen British, Allied or neutral ships were sunk against a loss of twenty-seven submarines sunk in their operating areas, and a further twenty-nine either on passage or in the Baltic or in air raids on harbours.

Though hope of doing anything effective with the old types of submarines gradually faded, the prospect of new types with high underwater speed continued to arouse enthusiasm. Great claims were made that they would revolutionize underwater warfare. But so effective had been the Allied air attacks that two or three of the small Type XXIII were the only submarines of this kind to go on service, and these claims were neither proved nor disproved. It seems important to keep this latter fact in mind, for as the War recedes further into the past there may be a tendency to confuse the lessons of experience with the claims put forward for new weapons that were just being produced at its close and were never fully tested. In this connection it is interesting to note the change in ideas as to the way in which this new weapon would circumvent the defence, apart from the general thesis that submarines that could go faster underwater than most of their opponents could steam on the surface were bound to win.

As far back as February, 1944, when discussing the failure of air reconnaissance to give a submarine pack sufficient warning to concentrate during the night (i.e., before daylight and aircraft forced them to dive) Doenitz says that "this case shows clearly what prospects the submarine Type XXI would have had. With this type it would have been possible to shift the location of the boats sufficiently while submerged even on the day preceding the night of the attack." Yes, possibly, providing the Germans were able to keep scouting aircraft in touch with the convoy. That seems to have been expecting rather much against an enemy with such powerful air forces engaged in trade defence; but it was certainly in the revival of the pack attack in some effective form that our greatest danger lay. Later, however, the Germans seem to have contented themselves with far lesser hopes. On 18th March, 1945, Doenitz informed Hitler "of the very good results that were reported by the commander of a submarine Type XXIII—Lieutenant Heckel. After the attack he withdrew at a speed of 9 knots, changed over to crawling speed and succeeded in escaping from the anti-submarine forces; they dropped depth-charges without effect far away from the submarine." No doubt Lieutenant Heckel was both skilful and lucky, but this seems small beer for discussion between the head of a state and his naval Commander-in-Chief. If the main advantage to be derived from high underwater speed were that it might assist in escaping after an attack, the chances of a real change of fortune were remote. Evidently there were other advantages, and if these submarines had taken the sea in large numbers we might well have had a difficult time before they were defeated. But, as already noted, none of the claims made for them were substantiated.

While the German navy had declined almost to zero in its powers of attack, it is shown by these minutes to have been almost equally impotent in defence. The most it could do to defend the Continent against invasion lay in the employment of small craft; and the protection it could afford to such seaborne traffic as remained vital, including supplies to the army in Norway, was inadequate to prevent crippling losses. The importance of this traffic, particularly the iron ore trade which came through the Baltic in Summer, but must still be shipped down the Norwegian coast from Narvik in the Winter, is constantly stressed. The Summer traffic in its passage across the Baltic and also along the North Sea coast for Rotterdam and the Rhine, was more and more seriously endangered by aircraft minelaying, and the difficulty of keeping channels clear became steadily greater with the increased ingenuity of the

mines and the decreasing number of sweepers; new construction having been seriously neglected in the middle years of the War. On 26th February, 1944: "Already the mine situation at the entrances to the Baltic Sea is a cause of great anxiety to the Commander-in-Chief, Navy. Enemy pressure against our coasts and sea routes will certainly increase greatly during the coming year. For this reason the Navy will go through a critical period until the programme ordered by the Fuehrer in April, 1943, for construction of defensive vessels such as minesweepers and motor minesweepers begins to take effect." And on 4th May, 1944: "The Commander-in-Chief, Navy, points out that this mine war threatens the submarine training regions, the supply service to Norway and ore imports from Sweden in a very serious way." The situation was not, apparently, much improved even when more sweepers came into service, for on 3rd March, 1945: "The Commander-in-Chief, Navy, reports to the Fuehrer that he is worried about the mine situation in the Baltic. The enemy is making extensive use of minesweeping interference devices such as delay clocks and period-delay mechanisms and has begun to use deep-note firing devices. However, the Commander-in-Chief, Navy, hopes that we shall likewise master this type of firing device since the Mines Branch had the foresight to order mass production of anti-deep-tone mine devices a year ago, although it was in no way certain at that time that the enemy was going to use this type of firing device."

The dangers on the West coast of Norway were not so much from mines as from attacks by aircraft with bombs, rockets and torpedoes—Coastal Command in the South and carrier-based aircraft of the Home Fleet further North. Against Coastal Command there was little that could be done except by fighters, where available, and "flak" ships. But as regards the carrier-based aircraft there were the carriers themselves, hovering off the coast, as obvious targets if only some means could be found for striking at them effectively. This led to some suggestions from the Armed Forces High Command that submarines should be used in conjunction with aircraft against the carriers; but Doenitz protested (31st October, 1944) that "the use of submarines for this purpose is hopeless and should not be attempted." But something had to be attempted to ease this nearly intolerable situation. On 30th November, 1944, "the Commander-in-Chief, Navy, refers once more to the serious threat to German shipping along the Norwegian coast, and the great losses we incur there, primarily inflicted on us by the enemy air forces. Unless we can guarantee adequate air reconnaissance against enemy aircraft, aircraft-carriers and surface forces, the time will not be far off when ship movements in this region will come to a complete standstill." And a few days later: "The Commander-in-Chief, Navy, reports to the Fuehrer his decision to station seven submarines—the only ones equipped with the *schmorkel* device available in that region, outside Scapa Flow, for attacks on entering carrier forces. In reply to the Fuehrer's question whether it is correct to assume that Scapa Flow is the base for carrier forces, the Commander-in-Chief, Navy, states that in all probability such is the case, although he has no definite proof." Evidently this was all very discouraging for Doenitz, and it shows air reconnaissance over our naval bases to have been virtually abandoned. In the event nothing was achieved.

In defence against the Continental campaign of the Anglo-American armies more positive action could be taken, at least after the invasion had been launched, but only by mosquito forces. As early as 19th January, 1944: "The Fuehrer shares the view that our cruisers cannot be used against enemy landings in the Channel-Holland Area." But as soon as our forces landed in Normandy the faithful submarines were called in—though rather despairingly. "All submarines with

schmorkel—eight at present—are now operating in the Channel. They will be reinforced in July by fourteen boats, seven from Germany and seven from the West. Although great losses are anticipated, their use in this area is justified by results," (29th June, 1944). But, in fact, the results were meagre. More was hoped for, and with some justification, from vigorous mining in and round the transport anchorages with the new "oyster" mines, laid both by aircraft and motor torpedo-boats. Hitler is quoted (29th June, 1944) as saying: "We have got to lay mines and still more mines in the Seine Bay with the tenacity of a bulldog, following the British procedure against our own transport network. Just as they do, we must concentrate practically everything against the enemy supply lines; it is incomparably more effective to sink a whole cargo than to have to fight the unloaded personnel and material on land at a later date"—for a German mind a remarkably clear exposition of the importance of sea power.

Motor torpedo-boats, too, working from Havre, attempted torpedo attacks as well as mine-laying, but in this they were for the most part defeated by our blockading destroyers, frigates and motor torpedo-boats. A beginning was made, also, with what the Germans called "small battle weapons," which included midget submarines and human torpedoes. Here, in the Seine Bay, not much could be done; but later, when the main supply line ran from the Thames to Antwerp, it seemed that the conditions for midget submarines were all that could be desired, and there was a flare-up of genuine enthusiasm. The first eighteen *Seehund* (two-man) submarines sailed on their first mission on 1st January, 1945, and two days later Doenitz tells Hitler: "Assuming that out of the eighty *Seehund* midget submarines scheduled to operate per month only fifty are able to attack, then one hundred torpedoes will be fired at the enemy. If 20 per cent. of the torpedoes hit their targets, about 100,000 tons will be sunk." But on 18th January: "An unexpected storm interfered with the success of the first operation by *Seehund* midget submarines . . . Because of the long distance involved, the other small battle weapons can only be used as suicide weapons and then only if the weather is suitable."

In their next sortie from IJmuiden, ten *Seehunds* left on 21st January, and nine had returned by 25th January. "Partly because of technical defects and partly because of unfavourable weather their mission was unsuccessful." There follows a long apologia by Doenitz in which he admits weather limitations but makes much play of the experience gained and says: "The most important discovery was made that enemy aircraft and naval forces can neither see the *Seehund* submarines nor locate them by radar even when they have surfaced. Furthermore, they are relatively immune to depth charges because they offer so little resistance because of their shape, that they are tossed aside like a cork instead of being damaged. Thus the *Seehund* submarines have proved relatively immune from enemy defences . . . It can be expected that future mass operations by *Seehunds* will score considerable successes under favourable weather conditions." But little came of all these hopes. It was the old story of expecting much from a weapon which seemed admirable tactically (and the comparative immunity from detection of the *Seehund* was certainly a great asset) without correctly appraising the strategical problems of its employment, i.e., getting it to the right place at the right time. In March, three ships were sunk amounting to 5,300 tons, and that seems to have been the total achievement of all these craft before the isolation of Holland put an end to their activities.

The tale of the German navy's decline had now reached its last page. When the surrender was signed on 7th May, some submarines were the only units still

engaged offensively, and 156 of them surrendered. All that remained of the big ships had been trying to help the army in the Baltic with flanking bombardments, but most of them had been sunk by Allied air attacks—the "Scheer" on 9th April, and the "Luetzow" on 16th April, while the "Hipper" and "Emden" were badly damaged. Only the "Prinz Eugen" and "Nuremburg," and a few destroyers, escort vessels and minesweepers remained to be surrendered.

CAUSES OF FAILURE

Viewing thus the virtual annihilation of a once proud and efficient navy, it is natural to give some thought to the causes of its failure to achieve more than it did. These causes must, in all, have been many and complex, but there are at least a few that stand out with some clarity. At one of the last conferences between Hitler and Doenitz (28th March, 1945): "A lengthy discussion developed between the Fuehrer and the Commander-in-Chief, Navy, on the suitability of the various types of vessels built in the course of the expansion of the German Navy prior to the War. The Commander-in-Chief, Navy, believes it was a mistake to build battleships instead of concentrating on the construction of a much larger number of submarines. Our enemies had such a lead in the field of battleship construction that it was impossible for us to overtake them. A superior submarine force would have given us a much better chance to end this war in our favour within a short time." Was Doenitz right?

In the preparation for aggressive war which Hitler had fostered in the years before 1939 the army achieved overwhelming superiority to all prospective opponents, the air force was able to do all that was needed by the army and was within measurable distances of overcoming the air defences of England, but the navy was not strong enough either to assist the army to invade England or to throttle our power to wage war by cutting off our seaborne supplies: it was not till the war-built submarines came into service that our shipping losses became dangerous. For these shortcomings a fundamental reason was the lack of influence of the navy's leaders in the German military hierarchy. The prestige and influence of the army in German national life was founded on long-standing and powerful traditions; and the power of the air force, headed by the boastful Goering, though it could not yet rival that of the army was on only a slightly lower plane. Being thought of in some respects as the air arm (*Luftwaffe*) of the army it partook of much of the latter's prestige; and the sedulously fostered idea that, against countries not easily accessible to the army, it might be able to win the War almost off its own bat helped to give it a status of its own. But the navy had no such assets. It had to maintain its claims in an atmosphere of military thought which, though vigorous and able, was essentially continental and disinclined to grapple with the problems of sea power if it seemed at all practicable to side-track them. In the previous generation the ability, drive and enthusiasm of Tirpitz had built up a German navy which was a dangerous rival to the British, and which might have been a greater danger still had not Tirpitz himself fallen from favour when the time came to send it into action. But Raeder—Hitler's naval commander-in-chief, was not, it seems, a man of Tirpitz's calibre and only succeeded in building a force that copied the British and other major navies on a smaller scale without seriously rivalling them. At the same time it must be admitted on Raeder's behalf that there was one important difference in the situations confronting the two men. In Wilhelm II's Germany there was no doubt that Britain was the chief enemy. Hitler, on the other hand, seems always to have hoped with a part of his mind that British enmity could be

avoided, at least for some years. To this extent Raeder's difficulties in asserting the claims of sea power must have been greater than those of Tirpitz.

In one other respect, too, was Raeder handicapped. For many years before 1939 it had been obvious that aircraft were an important element in sea power. Two of the major navies—the American and Japanese, had long developed their own aviation. The British navy, too, had recently taken control of ship-borne aircraft, and Coastal Command, though the Cinderella of the Royal Air Force, was specialized in sea warfare and was a powerful asset in naval strategy. But, in Germany, such was the arrogance of the *Luftwaffe* in its claims to self-sufficiency that it was not only backward in developing aircraft suitable for flying from carriers but also paid little or no attention to naval advice in matters of sea warfare. Something was done to develop air operations over the sea, and where large forces could be brought to bear under favourable conditions, e.g. dive bombers in the Mediterranean, they were of great effect. But for the most part they lacked the strength that would have come from real co-operation with the navy, and for its part the navy was never able to develop this important element of naval warfare. This was undoubtedly one of the principal causes of the German navy's failure to achieve more than it did. It was a state of affairs against which Raeder sometimes protested, but without much vigour: one gets the impression that he could easily be browbeaten or disregarded by Goering. Doenitz, when he succeeded Raeder, was constantly striving to effect a real improvement; but although he was much more powerful vis-à-vis Goering, little was achieved, and by that time it was perhaps too late.

But admitting that Raeder was handicapped by lack of prestige and inability to develop a naval air arm, there are still the questions whether he was right to build the kind of navy he did and whether, when war came upon him sooner than he had expected, he used his existing forces to the best advantage. It has frequently been asserted that Raeder was a sound strategist—a view taken by the anonymous editor, British or American, who has done such valuable work in translating and condensing these minutes and clarifying them with introductory notes. Does this mean merely that he was an orthodox strategist on lines that would have been sound if practised in a navy which aimed, with reasonable justification, at eventually wresting command of the sea from its adversary? Or does it mean that he did in fact order or advise the employment of such forces as he had, or could build, in the most advantageous way? In particular, was Doenitz right in saying that the German navy should have built more submarines and fewer big ships in the years before the war?

These questions of what might have been can, of course, be discussed endlessly, but some interesting light is shed on the subject by the minutes of the *Fuehrer Conferences on Naval Affairs* for 1939 and 1940 which have also been issued recently. Here there is little evidence of a burning desire to overcome all difficulties, such as one would have expected from a Tirpitz, for example. Rather there seems an acceptance of the German navy's inferiority both to the British navy and to the other German services. It is true that naval plans had been built on Hitler's assumption that there would be no war with England before 1944 and that by this time Germany would have had the "Bismarck," "Tirpitz," "Scharnhorst," "Gneisenau," six Diesel-driven battleships with 16-inch guns, two aircraft carriers, five heavy cruisers, some light cruisers and destroyers and about 190 submarines. This would perhaps qualify for the rather over-worked description of a "balanced fleet"; but would that, in this case, have meant much more than that it looked tidy on paper? In spite of

the formidable power of the heavy ships, which surreptitiously exceeded the 35,000 ton treaty limitation by a large amount, there was no thought, apparently, of an all-out struggle in conjunction with the air force against the British navy. Rather there was to be commerce raiding by the Diesel-driven battleships, while the remainder tried to contain the British fleet in home waters—a strategy which would no doubt have caused us much trouble but one of admitted inferiority. Nor would 190 submarines have been enough for an effective blockade if the British navy and air force had made reasonable progress in provision of anti-submarine forces in the intervening years.

When, in the event, war came in 1939, Raeder's attitude was one almost of helplessness. Though the air force had been ordered by Hitler to make full use "of favourable opportunities to make an effective attack on massed English naval units especially on battleships and aircraft carriers," there was no sign of the navy co-operating in any way. In a memorandum of "reflections" written on 3rd September, 1939, Raeder says, *inter alia*, "The submarine arm is still much too weak to have any decisive effect on the War. The surface forces, moreover, are so inferior in number and strength to the British Fleet that, even at full strength, they can do no more than show that they know how to die gallantly and thus are willing to create the foundations for later reconstruction. . . . the 'Scharnhorst' and 'Gneisenau' . . . will have to attempt to hold down enemy battle cruisers in home waters and keep them away from the pocket battleships." This attitude continued to hold the field, and on 10th October Raeder pointed out to Hitler: "All-out operations by the 'Scharnhorst' and 'Gneisenau,' however, are restricted by the fact that they are the only battleships available for protection of the Baltic Sea and German Bight until the 'Bismarck' and 'Tirpitz' are ready"—surely an ultra-defensive view of the functions of capital ships in waters so close to their own powerful air forces. Such an attitude alone seems almost enough to account for the failure of German big ships to achieve anything substantial when they were eventually committed, piecemeal, to the attack. One gains the impression, here and elsewhere, that the general ill-success of the surface forces had its roots, not in any interference by Hitler or the Armed Forces High Command, but in Raeder's rather spineless and pedantic view of strategical possibilities.

Meanwhile there was naturally the growing awareness that if anything effective was to be done during the course of this War it must be done by submarines. Urged on by Doenitz, Raeder gradually evolved the programme of submarine building which was eventually to put us in such serious jeopardy. It seems, then, that among all the confusion of might-have-beens there is much to be said for Doenitz's contention that a greater emphasis on submarines in the years before the War would have stood Germany in better stead than the policy that was followed, provided one accepts that there was no real likelihood of the German navy and air force in co-operation being able to tackle the British fleet. At the same time, it was perhaps fortunate for us that the latter was not attempted and that there was so little effective co-operation in the German forces, despite the co-ordination that was, in theory, imposed by the Armed Forces High Command. There was, in fact, too little of a united effort to come to grips with the problems of sea power under modern conditions as applied to German needs, and it was in this that lay the essentials of the German navy's failure. Had these problems been dealt with more realistically, and had more concentration been applied to whatever line of conduct was decided on, there would have been less dissipation of effort, and the strain that was put on the still ill-equipped British navy and air force in the early years of the War might, had luck been against us, have grown beyond bearing.

THE IRAQI ARMY

By MAJOR W. N. SEYMOUR, Scots Guards

THE strategic position of Iraq in the Arab world gives her an importance to the Arab League of which she is fully aware. She is astride the line of communication to the Far East, with her eastern flank resting on the non-Arab States of Iran and Turkey; with an excellent port in Basrah and two partially navigable rivers, it is obvious that modern development can make of her a nation whose importance, not only to the Arab States but internationally as well, cannot be underestimated.

Enormous progress has been made since the country first came under British influence at the end of the 1914-18 war, and improvements since then in the armed forces, health, finance, commerce, communications and town planning are very real and noticeable. That is not to say, however, that there is no more to be done; the country ended that war in a state of confusion and destitution; the Ottoman Empire was never renowned for constructive development and Mesopotamia was no exception to Imperial Turkish misgovernment with all its attendant horrors.

Iraq has been very closely associated with Great Britain since 1918, particularly during the time of our mandate, which ended in 1932, and again during the last war, when, in 1942, the urgency of the Russian situation turned Iraq into a strategically important base for Allied troops. During these two periods much has been done for Iraq by the British, and it was due to the military situation in 1942 that roads were built in the North, thus opening up the most beautiful part of the country.

British Army units have now been withdrawn from Iraq and the only assistance available to the Iraqi government is certain advisers, a very few technicians—mostly engineers, and competent British executives helping to operate the Iraqi State Railway. One of the most active branches of the advisory tree is the British Advisory Military Mission. This consists of an Inspector-General and eighteen other officers. Their advice and help has been of great benefit to the Iraqi army; for instance, in assisting to put down the Kurdish rebellion under Mulla Mustapha in 1945.

At the time of writing, there is an agitation on the part of the army for modernization. At present, of course, it cannot be compared with that of a modern Power but, broadly speaking, it consists of a mountain division; a plains division; a third division—until recently in charge of training, but now chiefly responsible for administering a fairly up-to-date mechanized force; a river gunboat force; and various ancillary arms. The mountain division has pack transport and the plains division is in a state of semi-mechanization. There is an overall shortage of much modern equipment and weapons: L.M.G's are on an inadequate scale, 3-in. mortars are just arriving in the country, and the infantry still has the Boys anti-tank rifle. There is, in fact, a good case for bringing the army more up to date with heavier armour and armament, but on the other hand it is open to argument whether a modern army, such as we know it, can be formed on an efficient basis before the more important needs of the community have been attended to, for education, social services and good communications are a very necessary pre-requisite to any modern army.

The low standard of education pertaining throughout the country is even now having its effect upon the army. It is not possible to train every man to be an efficient Bren gunner, and the high proportion of illiteracy results in many of the best men being seized by the technical arms to the detriment of the infantry, whose

importance has not yet been fully recognized in Iraq. To argue that the British Army was largely illiterate not so many years back and has never failed to be an efficient fighting force is to beg the question. The high standard now required for every individual soldier necessitates that he must be an educated man; a modern army working well is the co-ordinated effort and thought of every individual, and men with no education cannot be expected to grasp the significance or importance of highly technical weapons.

Similarly, a modern army needs good communications; in Iraq, these are still poor; the roads are not adequately maintained and it appears that foreign technicians, as opposed to advisers, could do a useful job in this direction. The railways, although efficient, are badly in need of more rolling stock and at present are not capable of handling a large supply of military traffic and equipment without serious dislocation. Rivers are not satisfactory lines of communication by themselves, so if the Iraqi army is going to acquire modern equipment, vehicles and tanks, it will be necessary to pay attention and money to improving the roads and railways. Air strips and aerodromes too need to be improved before the air arm can be supplied with heavier bombers and faster fighters.

Social services are at present little understood, or if understood, are certainly not fully practised. The health of the people, whilst showing an improvement over past years, is still in an unhappy state; national insurance and a comprehensive pensioning system is still in its infancy. The soldier, like all other working men, is solely responsible for his dependants with the pay he earns and the effort he makes. In his absence, he must make other arrangements for the care of his family, for as yet the State has not reached the stage where everyone is assured a fair chance and a decent opportunity to survive no matter what befalls the husband or brother. A modern army needs good recruits; these would be more easily obtained if adequate protection was assured by the State for the soldier's family, for he would be more inclined to join up and serve his country if he knew that in his absence their welfare would be taken care of.

A great deal of money is now being spent on the army. New and expensive types of aeroplanes have recently been purchased.¹ A large number of military exercises are taking place, officers are sent on courses to England when opportunity occurs, and much new equipment and guns are on order. All this, however, is a drop in the ocean compared with what will have to be spent if the army is to be completely modernized, even though the fighting strength is little above two divisions. Is this great expense justified? The question is not easy to answer without some knowledge of the Iraqi budget and the country's fiscal system.

Iraq is certainly not a rich country, and it is questionable whether it is wise to spend so much money on the army until the social services and the overall economy of the country have been built up on a strong and prosperous footing. This is purely a question of policy for Iraq, and nobody else, to decide.

The military factor, however, can be viewed from a separate angle. To begin with, there is an ever-present threat in the North that the Kurds led by Mulla Mustapha, or any other fanatic, might come down from their mountain strongholds and invade Northern Iraq as they did in 1945: a possibility that cannot be discounted even though recent fighting with the Persians resulted in a surrender to the Iraqis of a substantial number of the recalcitrant tribesmen.

¹ The Air Arm is an integral part of the Iraqi Army.

The part of the country where trouble is most likely is very mountainous and only accessible by steep and narrow tracks; for the most part it is not passable to any form of M.T., and the only troops that can be used are those trained and toughened by mountain exercises. It is therefore necessary to maintain a mountain division, and this at present is kept, quite rightly, as the strongest of the two fighting divisions. This means that complete modernization can only reach one division, the mechanized force, some gunners, engineers and signallers; this is invidious and bound to promote a certain amount of jealousy.

The natural desire of the Iraqi government is to be able to defend the country against all comers; but modernizing two divisions will not do this; help will still be needed, and obviously forthcoming, from outside. On the other hand, there is a very real danger of tribal warfare which, with a little encouragement from trouble makers, can assume formidable proportions, and against this no outside help can be expected.

It would seem, therefore, that the mountain division must remain as such with modern equipment and armament consonant with its role. The plains division, the mechanized force, artillery, engineers and signallers could be brought up to date gradually as money became available and *pari passu* with important branches of government such as education and social services. The need for modern equipment is obvious, but this must not be allowed to outpace the state of readiness within the division itself. Gradually modern weapons must replace the older types and, as the standard of education of the recruit improves, the speed of this rearmament can be increased until a modern division is arrived at with up-to-date armoured units and aircraft to support it. In the years to come health and prosperity will increase and the army can be expanded on a modern basis until eventually Iraq achieves her ambition of a fighting force capable of operating against an aggressor with modern armament. But this will need time, money and careful planning by all branches of the executive—it is not wise for a country to try and keep more armed forces than its economy will support.

The history of Japan between 1854 and 1930 is worthy of study when considering the rapid and efficient growth of a modern State. When Commodore Perry opened up that country to the World, the Japanese awoke to find themselves in a mediæval condition. By hard work and ability to copy they built up a first-class industrial State, they mastered modern banking and economics, and they quickly made their country prosperous. Alongside this social and industrial revolution the growth of the armed forces marched hand in hand until, in fifty years, an army of bows and arrows had been transformed into a fighting force that shook the civilized world. There is a lot to be learned from this, provided the lesson is not carried on to a disastrous conclusion.

THE R.U.S. MUSEUM

By the SECRETARY

THE Museum is now fully open. The temporary screen at the southern end of the Banqueting Hall has been removed and, with one exception, the remainder of the ship models and show cases are now in place and on view. The exception is the very fine contemporary model of the 74-gun, sailing line-of-battle ship H.M.S. "Cornwallis," which is railed off for repairs and a big refit. This is involving work of such importance and interest that, when it is completed, it will merit a special article.

As mentioned in the JOURNAL for May of this year, the painted panels of the Rubens ceiling, which were removed by the Ministry of Works as a war precaution, are now being cleaned by that Department, and will not be ready for replacement for some time to come.

PERSONAL RELICS

The R.U.S.I. has always specialized in collecting personal relics of great commanders, in addition to mementoes of famous campaigns, battles, and Service events. The opportunity has been taken when unpacking all these treasures after the War to thin them out and re-arrange them, where necessary, so that they are now displayed to greater advantage. Where available, a small portrait of the original owner is now shown with each group of these personal relics. The effect is to give them more character.

The small room at the North end of the Banqueting Hall, known as the Wolseley Room, has been redecorated after suffering some damage from blast, and completely re-arranged. For many years it was used exclusively for the large collection of Wolseley relics, mostly presented by the Dowager Viscountess Wolseley. It has now been adapted and refurnished to house medals, orders, and decorations of every period and belonging to other great Generals besides Lord Wolseley. His other personal relics are, so far as possible, displayed elsewhere in the Institution; for example, the many beautiful caskets presented to him by various public bodies are well set out in a case on the landing outside the Council Room, while his full-dress uniform as Colonel of the Regiment of Royal Horse Guards from 1897-1907 adorns the Writing Room.

MEDALS

The walls of the Wolseley Room are now hung round with the medals of the magnificent collection made by his father and recently lent to the Institution by Major-General Sir John Whitaker. This most valuable acquisition will also be dealt with in a later article.

Allusion was made in the Museum article in the August JOURNAL to the clasps of the Naval General Service Medal. Since then the Royal Mint have provided twenty-three more clasps for the Institution's collection. It is hoped that, in due course, it may be possible to complete the full set. Members having any to spare are invited to send particulars to the Curator.

A RELIC OF H.M.S. "ROYAL GEORGE"

To the many relics of the sinking at Spithead of Kempenfelt's flagship, H.M.S. "Royal George," on 29th August, 1782, has been added a piece of the ship's great 24 inch (circumference) hemp cable, presented by Messrs. Larmuth and Bulmar.

Not only is this an interesting specimen of the anchor cables used for the largest warships before the days of chain cables, but it recalls the history of that disaster and the way in which the finding of the Court of Inquiry was coloured by political bias.

The Court, which appears to have been dominated by Rear-Admiral Milbanke and Captain Sir John Jervis, who saw an opportunity to embarrass the First Lord of the Admiralty—Lord Sandwich—found that "the ship was not over-heeled . . . that some material part of the frame gave way, which can only be accounted for by the general state of decay of her timbers . . ."; in other words, that the Admiralty had neglected to have the ship repaired and were directly responsible for the disaster.

The Institution has a small volume containing very circumstantial accounts of what occurred by the Captain of the "Royal George," the Flag Lieutenant, and another survivor. These make it quite clear that the ship *was* overheeled,¹ that the Carpenter went to the Officer of the Watch more than once and pointed out the danger but was told to mind his own business; he also went to the Captain who was on deck. Orders were then given to right her, but too late. Water was pouring in at the lower-deck gun-ports at such a rate that she overturned. Cowper's dramatic verses asserting that "a land-breeze shook the shrouds" and capsized the ship were pure poetical fiction!

A HISTORIC FLYING HELMET

The Air section of the Museum has received an interesting addition to the relics of the late war in the shape of a helmet worn by the pilot of one of the crack target-locating aircraft belonging to the famous German squadron, K.G.100. The donor—Group Captain C. E. Chilton—recalls that this squadron specialized in the "beam" raids carried out on our cities at the end of 1940 and early 1941.

The helmet is of the normal infantryman's type, but with the pockets on either side beaten out so that it can fit over the pilot's flying helmet with the earphones. The fact that the pilots of this squadron adopted these helmets is a tribute to the respect with which they came to regard the R.A.F. night-fighters.

The Naval Air section has received a welcome addition through the generosity of Messrs. Blackburn Aircraft Ltd., who have presented a model of their Firebrand Mk. IV torpedo-fighter. With the assistance of the Admiralty and of the makers of naval aircraft, this series of models is particularly complete and up to date.

¹ She was listed, by running out the Port guns and running in those on the Starboard side, to enable an underwater fitting to be repaired. Stores were being hoisted in on the Port side while the ship was heeled over.

IS IT HAPPENING AGAIN ?

By NAVARINO

ON 21st October, 1947, Parliament—which had just reassembled—was informed that the Services were to be reduced by 150,000 men. The Defence White Paper published in February¹ had foreshadowed that the size of the Armed Forces at 31st March, 1948, would be 1,087,000. The new figure was now 937,000. This reduction is to be effected primarily by accelerating the release of conscripted or time-expired men and women from the Services.

Full details of the effect of this drastic reduction on each of the Services have not been made known as yet ; but it has been stated officially that the strength of the Navy is being "run down" from 178,000 to 140,000. The Minister of Defence has stated that the immediate effect of this is that the Home Fleet will have "for an emergency striking force during this temporary period of readjustment" one cruiser—H.M.S. "Superb," and four battle-class destroyers.² According to a well-informed report in the Press, the remainder of the Fleet being "temporarily immobilized" includes the battleship "Duke of York," the cruisers "Cleopatra," "Diadem" and "Sirius" and eight destroyers. The cruiser "Dido" is being paid off into reserve.

The Minister also said, "The period of immobilization will, in the case of the ships being now adjusted, be short, and a large part of them can be brought into a state of operational efficiency in a comparatively short time. The Mediterranean Fleet," he asserted, "is being maintained virtually at full strength." A recent programme of that Fleet's cruise mentions four cruisers, two aircraft carriers, and eighteen destroyers. The Pacific Fleet is being reduced, but no details have been published. The American and West Indies Station is losing a cruiser and two frigates, leaving there only one cruiser and two sloops. Naval Air Stations and Training Establishments are also suffering severe reductions.

Only the vaguest pronouncements have been made about the other two Services. The policy as regards the Royal Air Force is "to maintain the structure . . . and its initial striking power," whatever that may mean.

The Army comes last on the official list of priorities. After the needs of (1) Defence research ; (2) The Royal Air Force ; (3) The Maintenance of sea communications and, therefore, of the most efficient Navy we can get "in our circumstances," the Government will "do all it possibly can for the Army." It is expected that by March, "the Army's oversea responsibilities falling on British manpower will be limited to our share of the occupation of Germany, the requirements of the Middle East and the small but important garrisons needed at a variety of overseas stations."³

It is a coincidence, but a timely one, that there has just been published the second volume of Admiral of the Fleet Lord Chatfield's autobiography, to which he has given the title *It Might Happen Again*.⁴ In this he draws on his exceptional experience at the Admiralty and subsequently as Minister for Co-ordination of Defence during the nation's hectic preparations for the late war to show us the

¹ *Statement relating to Defence* (Cmd. 7042), 14th February, 1947.

² Statement by the Minister of Defence on 23rd October, 1947.

³ The Prime Minister in Parliament, 21st October, 1947.

⁴ *It Might Happen Again*—Vol. II. The Navy and Defence, by Admiral of the Fleet Lord Chatfield, P.C., G.C.B., O.M., etc. (William Heinemann, Ltd.) 18s.

terrible risks which were run by draining the Services to such an extent in peacetime that it took years of war and ruinous expenditure to build them up and win through to safety. Here we are given chapter and verse for how this perilous situation came about, and now is the moment when this book should be read by every intelligent man and woman in this country, because it will enable them to understand that security must come before all else in national, as it must in private life, and that without it welfare has no sure basis. They will, at the same time, be able to appreciate fully how our weakness in arms brought about the late war and nearly caused us to lose it. If they then compare that grim record with what is being done to the Services to-day, they cannot fail to ask themselves, "Is it happening again?"

Lord Chatfield shows that the process of our undoing started about the time of the Washington Conference of 1921-22. He was present as expert adviser to the British delegation, and has recorded that it was "a great attempt to lessen international rivalry and to lay the foundations for a pacific settlement," but "the pendulum swung violently over. Weapons were not a defence against war, they were on the contrary said to be the cause of war; all who doubted this new theory and tried to keep the sword still bright and powder dry, were dubbed 'militarists.'" This theory, however, failed to "insure against miscalculation"; it ignored "the instability of human character, the sullen anger of the crushed, the inevitable desire for revenge"; it assumed that "this desire could be overcome by argument instead of by strength. Not only did statesmen believe they had created a peace machine to supplant armed force but they continued for fifteen years trying to strengthen the machine and to weaken the alternative. But the machine was built on sand, and when the storms came it was to wobble and finally to crash. . . ."

The Navy survived the Washington Conference, but a few years later was in danger of being badly holed, if not sunk by a different lot of theorists at home. There were self-appointed critics who tried to set up the sea and air Services as defence rivals. "The Navy was doomed. 'Look how much it costs,' they said. Aircraft were cheap, could fly anywhere. A single bomb, said a distinguished M.P., could sink the most powerful warship in one minute. . . ." Nearly ten years later, when this controversy was still acute, Admiral Chatfield—by then First Sea Lord, was asked by Lord Halifax—then Foreign Secretary, to try and put to him succinctly the capital ship case. The reply was "If we rebuild the battle fleet and spend many millions in doing so, and then war comes, and the airmen are right and all our battleships are rapidly destroyed by air attack, our money will have been largely thrown away. But if we do not rebuild it and war comes, and the airmen are wrong and *our* airmen cannot destroy the enemy's capital ships, and they are left to range with impunity on the world oceans and destroy our convoys, then we shall lose the British Empire." Incidentally, the argument put forward that a vast number of aeroplanes could be got for the cost of a battleship was proved to be fallacious. The Naval Staff calculated that "you could build and maintain over a period of time . . . about forty-five bombers for one battleship." The Air Ministry made it only thirty-seven bombers. The figure agreed on was forty-three. When this was put before the critics giving evidence to the Capital Ships Committee at the end of 1936, they were dumbfounded—and so was the Committee. It was, of course, as the author says repeatedly, a case of needing "ships *and* aeroplanes," not "ships *or* aeroplanes."

"The reader may ask," writes Lord Chatfield, "have the lessons of this war affected the general principles I have expounded . . . ? I think it is beyond question that if we had failed to rebuild our capital ships we should have lost the

War," and he explains why. But he adds, "It is certain that the capital ship as it was—and for that matter as it still is—will not be the type of capital ship of the future . . . as before we shall have to construct our ships to meet those of the enemy. The oceans are vast; land-based aircraft will not be the most practical means of controlling even the air over the oceans. Future sea warfare may largely be controlled by aircraft carriers and the Fleet Air Arm . . . the pieces on the chess board may be changed, but the black and white pieces must be similar in type and in power."

That brings us to the weapons of to-day and of to-morrow, and raises the question: What are we doing to ensure that the weapons we have are as numerous and as ready as those of other Powers; what are we doing to replace those which are patently obsolete? Materially, the late war has left us so well equipped that we are breaking up, selling or giving away to small and friendly nations warships, armoured vehicles and aircraft—and the national exchequer is recovering thereby a tiny proportion of the huge war-time expenditure; but much of this material is obsolete.

No one will quarrel with the policy which now places Defence research first in the order of priorities, but weapons of the future must get beyond the stage of the laboratory and the drawing board and into the experimental and trial stage at the earliest possible date, so that they may reach the training stage; then, and only then, will they be ready for war. Here, again, we find a warning in Lord Chatfield's memoirs. Alluding to the time when he, as First Sea Lord, was a member of the Committees on Foreign Policy and Palestine, he says, "My main expert advice had been to check the terrible risks inherent in our unarmed Collective Security foreign policy and of accumulating potential, if not active enemies while our fighting strength was still utterly inadequate. As First Sea Lord, I had been opposed to . . . throwing our youth into the field of slaughter without weapons. It was maddening, then, to read the heroic speeches and articles by men who had done nothing . . . to give the fighting men what they would need to carry out this altruistic policy."

This question of the provision of weapons—whether the battleships and bombers of yesterday or the rocket-ships and guided missiles of to-morrow—ultimately boils down to one of expense, and here Lord Chatfield shows us how the safety of the Country has been jeopardized again and again by "the immense power over Defence imposed on the Treasury by successive governments, based on a national wish to defend the Country as cheaply as possible. Money, the Services were told, was limited and the dangers of a financial crash were stated to be even greater than that of a military one! This dead hand . . . had acted like a hydraulic brake on every rearmament plan." That was written in relation to the years immediately before the scare of 1938, when "Mr. Chamberlain by his peace effort had given us a fleeting respite. The value of that respite was to the three Services incalculable. How they blessed his labours!"

Even after hostilities broke out we had the further respite of the "phony war" before the real contest started. To-day, he would be a super-optimist who would argue that we shall have time to rebuild and prepare for the next war as we did for the last; yet, to-day, we are told again that the dangers of a financial crash are greater than that of a military crash. Looking at the politico-strategic line-up in Europe and listening to the vocal war of ideologies and policies going on at Lake Success, can we feel sure that the two dangers are being correctly assessed and balanced?

Lord Chatfield recalls, too, how Democracy is wont to neglect its national and Imperial insurance premium, and how in dictator countries great secret decisions

may be taken over the public head. So it was when "the nation was surprised by the rapidity and, in some respects, the extent of the rearming of the dictator states, and the financial sacrifice *they* were making for the purpose." May this not happen again? If so, how long shall we have to get ready? What will it mean if next time we are not ready?

That is the crux of the whole situation to-day. The Services are being pared to the bone; weapons used in the last war are being got rid of or laid up to deteriorate in cold storage; money is not forthcoming for new ones; worst of all, the number of trained and disciplined men is being so reduced that, for the time being, at any rate, we shall no longer be, militarily speaking, a first-class Power.

It is one of the weaknesses of democracy and particularly of the amiable attitude of our people towards the rest of the World that it takes a big scare to make their political leaders regard the Services as the first call on the public purse. "The 1939 Estimates for the Navy rose to nearly £150 million; yet, when war broke out in September, 1939, even this *unspent* sum was greatly increased," we read in Lord Chatfield's book; and again, "The anxiety of the country and Parliament about the Army was growing rapidly . . . The Prime Minister himself was realizing that some further immediate steps had to be taken. It was this that led to the sudden decision to double the Territorial Army. It was a sop to the spirit of conscription that was boiling up. It was a political decision made overnight without consultation with the General Staff or myself"; the Minister for Co-ordinating Defence heard it first at the Cabinet Meeting next afternoon. "But," he remarks, "it was largely only a paper decision; for the equipment for these new divisions would take months, if not years, to produce." The politician is wont to believe that by voting Supplementary Estimates or issuing Orders in Council when the emergency arises he can make good in a night the effects on the Services of years of neglect and of drastic cuts; every officer and man with any practical experience knows that this is not possible, and to trust to eleventh hour measures of this kind is to live in a fool's paradise.

It Might Happen Again tells us "The difficulties of the Cabinet in finding enough money for defence with all the other demands made on finance . . . are very great; so the temptation to dip into the sacred defence insurance premium for other purposes, perhaps under great political pressure, will also be great. Once the temptation is given way to, it is apt to become a habit, until it becomes gradually easier to reject the advice of the nation's technical advisers without informing Parliament. Thus the nation loses touch with its security. When it becomes anxious and deduces for itself that all is not well, panic and recrimination ensue; but it is then too late." We may well ask, is this happening again?

In a Postscript to this book, which is such a mine of information and wisdom that it should be read from cover to cover, Lord Chatfield refers to the White Paper on "Central Organization for Defence" (Cmd. 6923), published in October, 1946, as an effort which will "much improve the defence administration of the United Kingdom." He points out, however, that it does not grapple seriously with the problem of uniting the Empire in defence; it fails to remove United Kingdom defence from party politics or to proclaim that the safety of the Country is a first charge on the national income. It fails to establish the importance of educating our future statesmen and our citizens in defence matters. We are still without properly organized security, and unreadiness for war—which is in our blood—can happen again and bring us once more to the edge of the precipice"—and this was written before the recent wholesale reductions of the Services!

THE INTERNATIONAL SITUATION

THE DANGER SPOTS

JUST two years ago, the Allies were able to celebrate the final victory over the last of their enemies—the cause of freedom had triumphed over aggression ; it only remained to tidy the World after the chaos of war, to take precautions that neither the old nor new aggressors should trouble it again, and then get on with life in security and civilization.

Two years later, we find the World more acutely divided politically than it was before the War, the newly-fashioned peace-keeping machinery breaking down before it has got beyond the stage of trials, and new danger spots continually breaking out like some malignant rash. The military significance of these political irruptions needs watching for, when statesmen and diplomats fail in their task and the final ultimatum is received and rejected, the Services are called on to retrieve in a battle of arms what has been lost in the battle of words.

The battle of words between what is coming to be called the Western and Eastern Ideologies is being waged now with ever increasing vigour and acrimony. No one can tell the outcome ; but it would be foolish indeed to assume that it will soon die down and leave the World at last in a state of quiescence. Fundamentally, the so-called Eastern Ideology is aggressive and acquisitive ; it inevitably gravitates towards totalitarianism. Western Ideology, in the main, would be content to defend its way of life, which favours democracy as we understand it, and freedom of the individual ; it does not wish to force it on nations who may prefer a different form of government.

The line-up of European Powers on one side or the other, as indicated by the character of their governments, was brought into clear relief by the Paris Conference on the Marshall Plan. That was dealt with in this section of the August JOURNAL. There it was seen that at present France, Austria and Italy are in what the Soviet government calls the Western *bloc*.

On 5th October, it was made known that the Communist parties of nine European countries had decided to set up a "Communist Information Bureau" with headquarters in Belgrade. One of the objects of this organization is to be "to co-ordinate the activities of the Communist parties on the basis of mutual agreement." The majority of the nations represented at the secret meeting in Warsaw in September, which gave birth to this so-called Bureau, were those which already belong to the *bloc* dominated by Moscow ; but Communist party representatives from Austria, France and Italy were there—the spearheads of infiltration.

AUSTRIA

Austria, as part of an ex-enemy country, is still supervised by the three former Allies. Their treatment of her is striking in its contrasts.

As from 1st July of this year, the Austrian Government were informed, they would have no further financial burden from the presence of some 12,000 American troops in the U.S. Zone.

On 16th September, the British Government formally terminated the state of war between Britain and Austria. It was recalled that Britain had been a party to the Moscow Declaration of 1st November, 1943, that Austria should be re-established as a free and independent State ; she was recognised by Britain as such a State on 5th January, 1946, even though it had not then been possible to conclude

a peace treaty. Britain made a contribution to the economic recovery of Austria in the form of a grant and credit up to £10,000,000 in 1947.

Meanwhile, in the early hours of 2nd August, Soviet troops took possession of the largest refinery of oil in Austria, at Lobau—10 miles East of Vienna. The plant deals with 25 per cent. of the country's refining capacity and is linked by pipe-line to the Zistersdorf oilfields. The latter are already under Soviet control. The Lobau refinery was being controlled jointly by American and British oil companies. Strong protests have been made by the Military Governor of the U.S. Zone and by Sir George Rendel, British delegate on the Four-Power Austrian Treaty Commission discussing German assets in that country. This high-handed and unfriendly action by the Soviet government is yet another indication of their aggressive policy in Europe and that they aim to dominate yet another nation—at present on the fringe of the *bloc*—by force, if it will not submit to political pressure. There is just this difference, however, between Hitler's coup in March, 1938, when German troops crossed the frontier and marched into an already politically disintegrated Austria, and her situation to-day—Britain and American have guaranteed her freedom and independence; British and American troops are on the spot; and it would be a breach of faith if they were withdrawn until freedom and independence are assured to her.

FRANCE

It cannot be said that France is in any immediate military danger of being absorbed into the oligarchy of the Kremlin; but it would be idle to deny that she is so unstable politically and economically that she is a prey to warring parties and ideologies with the resulting weakening of her military potential. It was this internal weakness which played so disastrous a part before and during the late war, and which makes her a danger spot to-day.

ITALY

The future of Italy hangs in the balance. In the 1914-18 war, she left the Three-Power combine and as an Ally played an invaluable part by assisting the strategic position of the Entente in the Mediterranean—with subsequent benefit to herself. In the 1939-45 war, under the Fascist regime, she made common cause with her Nazi confederate. By a death-bed repentance, a regenerated Italy has been permitted to escape the extreme penalties of her defection. Which way will her political pendulum swing in the years to come; towards totalitarianism—Fascism under another label, or towards alliance with free communities?

Strategically, she must always be an important factor in the Mediterranean. As a sea and air Power, she can either safeguard or threaten our communications with the Middle East and all that depends on them. Therefore, until she has become politically stable, she, too, must be regarded as a danger spot.

PALESTINE

Many people have forgotten that just ten years ago a Royal Commission was appointed, with Lord Peel as chairman, to ascertain the underlying causes of the disturbances in Palestine and to make recommendations for the removal of Arab and Jewish grievances. That Commission reached the conclusion that Arab-Jewish differences were irreconcilable and that the present Mandatory system provided no solution of the problem. They recommended partition and outlined a suggested frontier. Both Arabs and Jews were highly critical of the proposed solution, but the British Government were favourably inclined towards it and the intention was

that it should be the basis of a series of conferences with the League of Nations. But the War came and the League died. Now the problem of the future of Palestine has recurred in more acute form and has been passed to U.N.O. for solution.

The Mandate has been an ever-increasing military burden and diplomatic embarrassment to Britain ever since the Balfour Declaration landed us in an untenable position by trying to curry favour with world-wide Jewry during the 1914-1918 war without upsetting the Arabs. To-day, Palestine is too great a financial burden for Britain alone to bear any longer, while the long delay in arriving at a solution of the problem of the future control of the country is merely piling up for us more and more odium, and alienating increasingly both Arabs and Jews.

From a strategic point of view, however, the importance of Palestine should not be ignored. Throughout two major wars it has formed one bastion safeguarding the approach to the Suez Canal; the other has been Egypt. If both countries cease to provide bases for British forces—sea, land and air—as seems likely, they will become potential danger spots in unfriendly hands. Whatever the solution decreed for Palestine by U.N.O., it will not please both Arabs and Jews; far more likely, it will displease both, and Britain, the Power which—as each will see it, brought about a crisis and cleared out, will reap the hatred of both sides for leaving the country in such a mess.

EGYPT

The other bastion to the Suez Canal is showing little gratitude for having been saved by British arms from Nazi Germany. The fact is that such slogans as "Clear out the British" or "Egypt (and Sudan) for the Egyptians" have become the catch-words of the rival political parties, the party out of office using them to belabour the party in office for not being sufficiently patriotic; while the party in office relies on them to retain office.

Here again, British policy to-day is to clear out from wherever we are not wanted; but agreement over the future of the Government of the Sudan remains a stumbling block in the way of our final departure.

THE SUEZ CANAL

Assuming that before very long there are no British forces in Palestine or Egypt, how is the security of the Suez Canal to be ensured, assuming that in another war those two countries are no better but no worse than neutral?

Cyprus is, geographically, the obvious sentinel. Militarily, it is, as yet, very inadequately developed, while politically there is an element which would like to end British possession in favour of Greece. It is obvious that, with the trend of events on the mainland, Cyprus assumes greater importance than ever and should be developed as a naval and air base to the maximum extent which local facilities will permit.

GREECE

It is quite clear that Moscow is urging her dutiful children—Bulgaria, Yugoslavia and Albania, to make the maximum trouble for Greece by aiding the forces of unrest within and supporting revolutionary bands near the frontier. This is clearly part of the Soviet government's policy of aggression which seeks unceasingly to enlarge their area of influence in Europe.

The Greek Government is waging a very difficult war against this external and internal pressure, and there is little doubt that without British and American

help the country would be in danger of collapsing into a state of anarchy. If this were to happen, the Soviet *bloc* would soon gain a long coast-line in the Eastern Mediterranean which would be a direct menace to Turkey, Syria, Palestine, Egypt and, of course, the Suez Canal.

It is not surprising, therefore, to find those one-time traditional enemies—Turkey and Greece, in the same camp.

SOVIET RUSSIA

The greatest danger to the peaceful settlement of the World to-day is, patently, the aggressive or obstructive—as it suits them—attitude adopted by the small body of dictators in Moscow and their spokesmen at the councils of the nations. It is this attitude which is shedding the shadow of war over humanity yet again. No one imagines that Soviet Russia is deliberately seeking war, but her dictators are repeating Hitler's mistake in despising the Powers who stand in their way and in thinking those Powers will not fight, no matter what oppression is imposed on weaker nations.

Strategically, Russia of to-day is better placed than in all her chequered history. In the Arctic she has no military rival on her side of the Polar regions. She is undisputed mistress of the eastern shores of the Baltic, having absorbed Estonia, Latvia and Lithuania and established political dominance over Finland and Poland. She would have little difficulty in obtaining mastery of the eastern shores of the Adriatic via Yugoslavia and Albania.

In the Far East, she has been given control of the Kuriles and rights in Port Arthur, Dairen and on the Manchurian railway. Communist forces are in a state of more or less perpetual war in Manchuria and parts of China. Siberia stretches its great arm across the whole of Northern Asia.

Last, but not least, there is a Soviet spearhead in Berlin.

Mr. James F. Byrnes—the war-time U.S. Secretary of State has recently summed up the Russian menace as follows: "For many reasons the Soviets do not want war now. They will, I believe, 'retire in a very decent manner.' But, if the other Powers do not 'hold firm,' then, as Marx warned us of the Tsarist Russians, 'conquest follows conquest and annexation follows annexation.'" But, he says too, "In evaluating present Russian policy, we can ignore the mass of Russians: they have no more influence on Soviet foreign policy to-day than they had under the Tsars. But in considering future policy, we must not ignore them. They are, I believe, our hope."¹

¹ Extract from Mr. Byrnes' book, *Speaking Frankly*, published in England by Messrs. William Heinemann.

CORRESPONDENCE

(Correspondence is invited on subjects which have been dealt with in the JOURNAL, or which are of general interest to the Services. Correspondents are requested to put their views as concisely as possible, but publication of letters will be dependent on the space available in each number of the JOURNAL.—EDITOR.)

THE NORWAY CAMPAIGN, 1940

To the Editor of the R.U.S.I. Journal.

SIR,—In the August number of the JOURNAL, under the heading "Norway Campaign, 1940, Despatch," you say "Lord Cork was the Commander-in-Chief of the Allied Forces."

I did not leave England as such, and it was not until 21st April, one week after the arrival of the Force in the area, that I received a message appointing me to the command.

By that time the initial opportunity to exploit surprise and take advantage of the confusion, which Admiral Whitworth had reported as existing among the Germans as a result of his action on 13th April, had long passed.

In our leading Service publication I should like this made clear; also the fact that any attempt that might have been made to do so was vetoed from Whitehall as the result of the interception in England of a message, intended to try and initiate such action, sent by radio on the evening of 14th April.

CORK AND ORRERY,

Admiral of the Fleet.

6th September, 1947.

THE TREND OF FUTURE WARFARE

To the Editor of the R.U.S.I. Journal.

SIR,—Lieut.-General Martel, in his article in the August number, suggested that "every nation will have a number of rocket stations," from which it will be possible to launch atomic or germ-carrying projectiles capable of destroying the greater part of an enemy nation. He did not, however, pursue the logical corollary of such a development—namely the attack and defence of such stations.

Obviously, in the realm of atomic and germ warfare, one of two things is bound to happen. Either some antidote, or at any rate, some partial palliative, will be developed, whereby these two threats will be deprived of the power of knocking out a victim completely in a matter of hours. Or, alternatively, no such antidote will prove to be possible. Whichever proves to be the case, the question of attack and defence of the rocket stations will be a matter of primary military importance.

For, even if some antidote is discovered, the destructive effect of strategic bombardment by rockets will still be so serious that no nation will be able to endure this attack indefinitely. It will be essential to "turn off the tap" of rocket bombardment as quickly as possible. History has already shown in two wars that the only certain method of "turning off the tap" of strategic bombardment is by land forces capturing the bases from which the bombardment is being launched. In the war of 1914-18 the aerodromes of Ghisteltes and St. Denis Westrem in Belgium were the principal bases for air attacks on London. They were heavily and continuously attacked by our air forces without appreciable diminution in the weight of enemy bombardment. It was only by the capture of these aerodromes by our armies that London was relieved of further bombardment. In the 1939-45 war the same held good as regards the German rocket-launching sites in the Low Countries. It was land invasion alone that put an end to the bombardment of London. General Martel has rightly stated that these rocket stations of the future will be almost invulnerable (to any form of counter-bombardment). They will not, however, be invulnerable to capture unless adequate land forces exist to protect them. So the question of attack and defence by land forces is bound to arise.

If, on the other hand, atomic or germ bombardment continues to be capable of wiping a nation out of existence long before the rocket stations can be attacked by

normal means, then the attack and defence of such stations will become a matter of even more acute and immediate importance, for the only hope of avoiding extermination will then be to capture the enemy rocket stations upon the first sign of impending trouble. Land forces have not stood still in the general speed-up of the tempo of war. They no longer consist only of the slow-moving formations of the last war. Airborne operations and the use of the "Fifth Column" provide two means whereby distant objectives can be captured within a matter of hours, provided that a plan for launching such a blow has been prepared in advance and is kept in readiness after the manner of a fire brigade. Thanks to a substantial increase in the fire power of very portable weapons (itself largely due to rocket technique) small forces of airborne troops or "fifth column" will, in future, be endowed with strong powers of forcing their way into defended enemy localities and destroying them.

These rocket stations will not be able to remain unknown to the secret service of other nations in peace time. It is impossible to hide such installations. Though their internal lay-out may be kept secret, their perimeter defences and surrounding terrain will be known to opposing general staffs in adequate detail for the making of a firm plan for their assault. There is probably no country in the world where it will not be possible to form small "fifth columns" and assign to them the capture and destruction of these rocket stations.

The obvious antidote will be the maintenance of permanent garrisons to protect the rocket stations. The greater the threat (from airborne landings or "fifth column") the larger will have to be the garrisons. As the existence of other nations may well depend upon ability to extinguish the rocket stations quickly, it seems likely that these two forms of offensive land operations will be prepared, by some nations at any rate, on a large scale.

Thus, a possible development in the trend of future warfare seems to be land operations, characterized by swift *coups de main*, using either airborne forces or "underground" forces already living in the enemy country. In either case the attacking forces will be maintained by air supply. This does not contradict the arguments of General Martel in favour of a small long-service Army constantly at war strength, but it suggests that the numerical strength of such an Army may have to be considerably greater than his article implies. Furthermore, this new Army will still have to concern itself very much with active field operations.

25th September, 1947.

"Bo'sun."

THE PROJECTED ASSAULT ON JAPAN

To the Editor of the R.U.S.I. Journal.

SIR,—I noted with some disappointment the fact that, in your August, 1947, JOURNAL on page 348 ("The Projected Assault on Japan"), your author omits any mention of the fact that the V Amphibious Corps, Fleet Marine Force, was to be one of the three corps in assault for the OLYMPIC operation. I think it might be said that the landing projected for this Marine organization was in fact the most difficult of the several major amphibious assaults called for in the entire plan.

In commenting upon Mr. Halliwell's reference to CORONET, I might add that his adjective "subsidiary," when referring to the Marine III Amphibious Corps, is hardly applicable to the most experienced major unit participating in the operation, as well as to one which was to execute a major landing in the initial assault.

HEADQUARTERS,
7th October, 1947. U.S. Marine Corps,
Washington.

STANDARDIZATION

To the Editor of the R.U.S.I. Journal.

SIR,—We have read with interest the excellent article on Standardization in the August, 1947, issue of your JOURNAL, but have noted with regret that no reference was made to British Standards nor to the work of the British Standards Institution.

As this Institution is the organization recognized by the Government and by industry for the preparation of all national standards (other than therapeutic), we trust that you will be good enough to draw the fact to the attention of your readers in the next issue of your JOURNAL and also the following points which we hope you will agree to be of general interest.

Industrial Standardization was pioneered in Great Britain when, in 1901, the Joint Engineering Standards Committee was formed by the Institutions of Mechanical, Electrical and Civil Engineers, the Institute of Naval Architects and the Iron and Steel Institute. The British Standards Institution has evolved from this Committee until to-day it covers over 50 industries with a total of 1,800 committees and more than 11,000 committee members drawn from Government Departments, from Technical and Research Institutions, from Trade Associations and from Industry. All these members voluntarily give freely of their time in the preparation of the British Standards of which there are now over 1,400 with a further 700 in course of drafting.

This co-ordination which, although covering many fields, has largely dealt with industrial equipment, has benefited the Services in facilitating the ordering of their requirements and in having provided within industry an appreciation of the advantages to be obtained from efficient standardization.

The precepts laid down by the British Standards Institution as a result of its many years of experience have now been followed by nearly all industrial countries. The Standard bodies in each of the countries forming the British Commonwealth of Nations co-operate closely, and there is a very large measure of agreement in our standards.

13th October, 1947.

L. G. WATKINS,
Public Relations Officer,
British Standards Institution.

REGIMENTAL TOASTS

To the Editor of the R.U.S.I. Journal.

SIR,—An article is now being compiled on the subject of Toasts in the British Army, and, in order that it may be as complete as possible, I should be grateful if Regiments would kindly let me know—

- (1) Whether their list of the Peninsular Toasts is identical with the following :

<i>Monday</i>	...	" Our Men."
<i>Tuesday</i>	...	" Our Women."
<i>Wednesday</i>	...	" Our Noble Selves."
<i>Thursday</i>	...	" Our Swords."
<i>Friday</i>	...	" Our Religion."
<i>Saturday</i>	...	" Sweethearts and Wives."
<i>Sunday</i>	...	" Absent Friends."

- (2) Whether it has ever been the custom in the Regiment to honour any special toasts. If so, please give particulars.

66A, Norfolk Road,
Littlehampton, Sussex.

C. C. R. MURPHY,
Lieut.-Colonel.

NOTE.—It is requested that replies be sent direct to this correspondent.—EDITOR.

GENERAL SERVICE NOTES

THE RESERVE AND AUXILIARY SERVICES

Speaking at the Mansion House on 20th October, the Secretary of State for Air, Mr. Arthur Henderson, emphasized the importance which H.M. Government attached to the Reserve and Auxiliary Forces, and to the Cadet Forces, as an essential adjunct to our Regular Navy, Army and Air Force. All the more because of the difficulties of our present economic conditions, the Services must look to the part-time help of the Royal Naval Volunteer Reserve, the Territorial Army, the Auxiliary Air Force and the Royal Air Force Volunteer Reserve.

THE BRITISH ZONE OF GERMANY

Lieut.-General Sir Brian Robertson, Bt., K.C.M.G., K.C.V.O., C.B., C.B.E., D.S.O., M.C., has been appointed Military Governor of the British zone of Germany, Commander-in-Chief of the British forces in Germany, and British member of the Allied Control Council for Germany (1st November, 1947).

MISCELLANEOUS

EXERCISE "SPEARFISH"

Senior Army officers from home and overseas Commands and representatives from the Dominions met at Chatham from 21st to 23rd July to consider various problems of military engineering. The Royal Navy and Royal Air Force were also represented. Special consideration was given to the engineering aspects of an opposed landing and to the effects of new developments on Sapper warfare.

ST. NAZAIRE

At St. Nazaire on 2nd August a monument commemorating the British Commando raid in March, 1942, was unveiled by the French Prime Minister, M. Ramadier. The cruiser "Sirius," wearing the flag of Admiral Sir Geoffrey Layton, who represented the Admiralty, conveyed a number of other British representatives, including the three leaders of the raid, all of whom were awarded the V.C.—Commander Ryder, R.N., Commander Beattie, R.N., and Colonel Newman. In the evening Mr. Duff Cooper, British Ambassador in Paris, held a reception on board the "Sirius."

INVESTIGATION OF CHANGES IN MAGNETIC DEVIATION

Unexpected changes in deviation, experienced by R.A.F. and civil aircraft flying on Imperial routes, will be investigated by a team of experts of the Empire Air Navigation School, Royal Air Force, Shawbury, during the liaison and training flight to Australia and New Zealand which was due to leave this country on 20th October. Research by the Empire Air Navigation School into the Earth's magnetic field has already yielded valuable scientific results. The flight of the "Aries I" over North Polar regions two years ago resulted in confirmation of the Astronomer Royal's calculations as to the location of the Magnetic North, and gave practical experience of the behaviour of the magnetic compass when flying over these regions.

The changes in deviation now to be investigated were first noted when the "Aries II" flew to South Africa last April. On this flight, and that made by the Mosquito which broke the record to the Cape, both aircraft experienced unexpected changes in deviation (sometimes as much as 10°), although these were found to have disappeared when the compasses were checked on their return home. The equipment to be used for this new investigation will include twelve magnetic compasses, an aircraft magnetometer (for measuring the strength of the Earth's magnetic field), and a new type of electric compass which does not depend on a magnet for direction but which incorporates an electronic control. It is hoped that by analysis of observations made in flight, and of compass "swings" at each stop, it will be possible to determine the causes of the

deviation changes experienced, and so obtain a remedy for what would otherwise comprise a serious navigational handicap.

The route flown will be Malta, Habbaniya, Negombo, Singapore and Darwin outward, and Singapore, Negombo, Nairobi, Capetown, Heany and Khartoum homeward. The aircraft is due back on 12th December. The total distance involved is approximately 32,500 miles, including liaison visits to units of the Royal Australian and Royal New Zealand Air Forces.

CANADA

NATIONAL DEFENCE COLLEGE.—The Minister of National Defence announced at Ottawa on 14th August that Canada is opening a National Defence College comparable, but on a smaller scale, to the British Imperial Defence College or to the United States National War College.

NATIONAL DEFENCE.—The present structure of the higher organization now resembles that of the United Kingdom, with a Minister of Defence, a Defence Council, and a Chiefs of Staff Committee. A large number of branches or functions formerly triplicated for the three Services have now been amalgamated or combined under a single Service.

The regular forces are now reduced to a cadre, and hardly constitute operational forces. The strength is less than 33,000, mainly concerned with training, planning, care and maintenance, and the training of the reserve. The strength of the Army is under 14,000.

UNITED STATES

CO-ORDINATION OF THE SERVICES.—On 26th July, President Truman signed the Bill co-ordinating ("unifying") the armed forces of the United States under a single Secretary of Defence. Mr. James Forrestal was sworn in to that post on 17th September. In the new organization there will be Secretaries of the three Services under the Secretary of Defence.

A new department of the Air Force will be established at once, while the Joint Chiefs of Staff will become a permanent institution. It will consist of Admiral Leahy—the President's personal Chief of Staff, Admiral Nimitz, and General Eisenhower. It is presumed that General Spaatz will become the new Chief of Staff of the Air Force.

The national military establishment will contain five boards under the Secretary of Defence—the Munitions Board, Research and Development Board, National Security Council, Central Intelligence Agency, and the National Security Resources Board.

Under the terms of the Bill, the United States Army Air Forces become a separate Service and will in future be known as the United States Air Force.

NAVY NOTES

H.M. THE KING

The King and Queen, with the Princesses Elizabeth and Margaret and Lieutenant Philip Mountbatten, R.N., visited ships of the Home Fleet in the Firth of Clyde on 22nd and 23rd July. There were 108 vessels, ranging from battleships to landing craft, assembled as a tribute by the Admiralty to the people of Glasgow and Clydeside for their service to the Navy, not only during the War, but in the building of so many fine warships. The Royal party proceeded from Prince's Pier, Greenock, to the flagship, H.M.S. "Duke of York," where they were received by the Commander-in-Chief, Admiral Sir Neville Syfret. Among those present in the flagship were the Prime Minister and Mrs. Attlee. From the boat deck the visitors watched a demonstration by the destroyer "Aisne," secured alongside, of an action against attacking aircraft. They afterwards visited the battleship "Anson," the aircraft carrier "Illustrious," and the destroyers "Myngs" and "Solebay." On 23rd July there was a Royal procession through the lines of the Fleet of motor torpedo boats of the Coastal Forces, in one of which were the King and Queen, the Princesses, and Lieutenant Mountbatten. During the morning the Royal Family visited other representative ships—the "Maidstone," flagship of the Flag Officer (Submarines), alongside which a demonstration was given by the submarine "Tiptoe"; the cruiser "Superb," and the light fleet carrier "Vengeance." The day concluded with a second visit to the "Illustrious," where the Royal party dined and attended a Fleet Concert. At the termination of the Royal visit Admiral Sir Neville Syfret received the following message from the King:—

"The Queen, the Princesses, and I have greatly enjoyed our two days with the Fleet. It gave us real pleasure to meet officers and men from your command, many of whom during the long years of war added glorious pages to the Navy's tradition of courage and efficiency.

I was much impressed by the general bearing of the ship's companies and by the smartness of the ships.

The Clyde has a magnificent record of service to the Royal Navy and to the Merchant Navy during the War. It is fitting that the Fleet should pay tribute to that record.

The Queen and the Princesses join me in wishing that every one in your command and your loyal friends ashore will enjoy the remainder of your visit.

Splice the mainbrace.

GEORGE R.I."

On 24th July, the Royal party visited the Isle of Arran in the cruiser "Superb" (the first Royal visit to the island since King Edward VII and Queen Alexandra were there in 1902) before leaving for London by train.

The following officers have been appointed as Naval Aides-de-Camp to the King from 8th July, 1947, in place of the officers stated:—

Captain W. G. Andrewes, C.B.E., D.S.O., in succession to Captain G. Grantham, C.B., C.B.E., D.S.O., promoted to Flag rank.

Captain A. F. de Salis, D.S.O., in succession to Captain C. E. Lambe, C.B., C.V.O., promoted to Flag rank.

Captain N. J. W. William-Powlett, D.S.C., in succession to Captain The Mackintosh of Mackintosh, C.B., D.S.O., D.S.C., promoted to Flag rank.

Captain F. S. Bell, C.B., in succession to Captain B. C. B. Brooke, C.B.E., promoted to Flag rank.

Captain W. Y. La R. Beverley, C.B.E., in succession to Captain G. T. Philip, C.B.E., D.S.O., D.S.C., placed on the Retired List.

Captain F. S. W. de Winton, in succession to Captain J. T. Borrett, O.B.E., placed on the Retired List.

Captain P. B. R. W. William-Powlett, C.B.E., D.S.O., in succession to Captain F. J. Wylie, placed on the Retired List.

Captain C. A. L. Mansergh, D.S.C., in succession to Captain P. H. G. James. Surgeon Rear-Admiral O. D. Brownfield, O.B.E., has been appointed an Honorary Physician to the King in place of Surgeon Rear-Admiral H. M. Whelan, deceased.

Surgeon Captain C. C. Elliott, D.S.C., V.R.D., R.N.V.R., has been appointed an Honorary Physician to the King from 9th July, 1947, in place of Surgeon Captain H. O. Martin, V.R.D., R.N.V.R., placed on the Retired List.

Commander (S) Richard Colville, D.S.C., R.N. (Retired), has been appointed Press Secretary to the King, in the room of Captain (S) Lewis Anselm Ritchie, C.V.O., C.B.E., R.N. (Retired), resigned, to date 27th September, 1947.

FLAG APPOINTMENTS

The following appointments were announced by the Admiralty on 22nd July :—

Rear-Admiral H. R. G. Kinahan to be Senior Naval Member and Vice-President (Naval) of the Ordnance Board, in succession to Rear-Admiral A. J. L. Phillips (15th October, 1947).

Rear-Admiral R. M. Servaes to be Flag Officer Commanding Reserve Fleet, in succession to Rear-Admiral L. H. Ashmore (17th September, 1947).

Rear-Admiral C. E. Lambe to be Flag Officer, Flying Training, in succession to Rear-Admiral The Mackintosh of Mackintosh (September, 1947).

The following appointment was announced by the Admiralty on 29th July :—

Rear-Admiral P. Ruck-Keene to be Director of Naval Training, in succession to Rear-Admiral J. W. Durnford (8th August, 1947).

The following appointment was announced by the Admiralty on 25th September :—

Rear-Admiral C. Caslon to be Flag Officer, Malaya, in succession to Rear-Admiral H. J. Egerton. The appointment will take effect in December.

The following appointments were announced by the Admiralty on 25th October :—

Vice-Admiral Sir Cecil H. J. Harcourt to be a Lord Commissioner of the Admiralty and Chief of Naval Personnel, in succession to Admiral Sir Arthur J. Power (March, 1948).

Admiral Sir Arthur J. Power to be Commander-in-Chief, Mediterranean Station, in succession to Admiral Sir Algernon U. Willis (May, 1948).

Vice-Admiral R. H. Portal to be Flag Officer (Air) (Home), in succession to Vice-Admiral Sir Thomas H. Troubridge (10th November).

Vice-Admiral Sir Thomas H. Troubridge to be Flag Officer (Air) and Second-in-Command, Mediterranean Station, in succession to Vice-Admiral Sir Cecil H. J. Harcourt (January, 1948).

CHAPLAIN OF THE FLEET

It was announced on 20th October that the Rev. Leonard Coulshaw has been appointed Chaplain of the Fleet, in succession to the Ven. Archdeacon J. K. Wilson. The appointment will take effect on 1st January, 1948.

CAPTAINS' APPOINTMENTS

The following are among the new appointments announced for Captains, R.N. :—

Captain G. C. P. Menzies to be Commodore-Superintendent, Sheerness Dockyard, vice Commodore J. T. Borrett.

Captain J. W. Josselyn to be Director of the Naval Meteorological Service, vice Captain L. G. Garbett.

Captain J. F. Whitfield to be Deputy Director of Welfare and Service Conditions, vice Captain R. D. Hughes.

Captain J. S. S. Litchfield Speer to be Assistant Naval Attaché, Washington.

Captain D. H. Everett to command H.M.S. "Duke of York" and as Flag-Captain to the Commander-in-Chief, Home Fleet, vice Captain E. M. Evans-Lombe (9th December, 1947).

Captain W. G. Andrewes to be Senior Naval Member of the Directing Staff of the Imperial Defence College, vice Rear-Admiral G. H. E. Russell (8th December, 1947).

Captain T. M. Brownrigg to be Director of Plans, Admiralty Naval Staff, vice Captain J. F. Stevens (9th January, 1948).

RETIREMENTS AND PROMOTIONS

The following changes were announced by the Admiralty, to date from 10th September :—

Vice-Admiral Sir Harold T. C. Walker, K.C.B., placed on the Retired List.

Rear-Admiral H. R. G. Kinahan, C.B., C.B.E., promoted to Vice-Admiral in H.M. Fleet.

Rear-Admiral Sir J. Anthony V. Morse, K.B.E., C.B., D.S.O. (Retired), to be Vice-Admiral (Retired).

The following retirement was announced in the *London Gazette* on 19th September :—

Rear-Admiral H. C. Bovell, C.B., C.B.E., D.S.O., placed on the Retired List (14th July, 1947).

HONOURS AND AWARDS

It was announced from 10, Downing Street on 15th August that the King had been pleased to approve that the dignity of an Earldom of the United Kingdom be conferred upon Rear-Admiral Viscount Mountbatten of Burma. It was on this date that Rear-Admiral Lord Mountbatten's appointment as Viceroy of India came to an end with the constitution of the new Dominions of India and Pakistan. The India Office had previously announced (on 3rd August) that the King had been pleased formally to approve the appointment of Rear-Admiral Lord Mountbatten as Governor-General of the Dominion of India, and of Mr. Mohamed Ali Jinnah as Governor-General of the Dominion of Pakistan, with effect from 15th August.

EXERCISES AND CRUISES

HOME FLEET CRUISE CANCELLED.—Ships of the Home Fleet assembled at Portland in mid-September for the Autumn cruise. On 6th October, they were due to have begun training exercises at Invergordon and from Cromarty Firth. On 25th September it was announced that on account of the urgent need for economy in the consumption of oil fuel the Fleet would remain at Portland during the Autumn exercise period. Refuelling and re-storing warships at sea were among the operations carried out from Portland.

MISCELLANEOUS MOVEMENTS.—The Hunt class destroyer "Bicester" visited Calais on 28th August to bring to Dover the King of Iraq and Queen Aliva (the Queen Mother).

The cruiser H.M.S. "Belfast," Captain H. B. Ellison, D.S.O., R.N., which had been absent from the United Kingdom since June, 1945, returned to Portsmouth on 15th October, following service with the British Pacific Fleet.

The cruiser "Glasgow" arrived at Portsmouth on 27th August after two years service with the East Indies Fleet.

The cruiser "London," after refit at Chatham, left Portsmouth on 11th September for a commission in the British Pacific Fleet.

The cruiser "Devonshire," training ship for Naval Cadets, was to visit Gibraltar, Ajaccio, Malta and Mers el Kebir (Algeria) during her two months Autumn cruise in the Mediterranean.

MEDITERRANEAN FLEET'S CRUISE.—Leaving Malta on 17th July the Mediterranean Fleet visited ports in Turkey, Russia, Greece and the Eastern Mediterranean until 23rd August. A cordial welcome was accorded the Fleet under Admiral Sir Algernon Willis when it arrived at Istanbul on 21st July on a six-day official visit. It included the cruisers "Liverpool" (flagship) and "Leander," the aircraft carriers "Ocean" and "Triumph," and the destroyers "Raider," "Chevron," "Chequers" and "Chaplet."

From 28th to 31st July, the "Liverpool," "Chequers" and "Chaplet" visited Sevastopol, the base of the Soviet Black Sea Fleet. The Commander-in-Chief and his officers and men were very cordially received by Admiral Oktiaberski, the Commander-

in-Chief, Black Sea Fleet, and men of his command. A number of sporting events and excursions, including trips to Yalta, the Crimean holiday resort, were arranged.

Fourteen ships of the Mediterranean Fleet visited ports in the Western Mediterranean during training exercises between 18th September and 10th October. These included Toulon, Tripoli (Libya), Bone (Algeria), Ajaccio (Corsica), Cagliari (Sardinia) and Bastia (Italy). The various units reassembled at Aranci Bay, Sardinia, for the annual sailing regatta.

C-IN-C., WEST INDIES' VISIT TO U.S.A.—Vice-Admiral Sir William Tennant, Commander-in-Chief America and West Indies Squadron, recently visited Washington in H.M. sloop "Snipe." He exchanged hospitality there with Admiral Nimitz and the U.S. Naval Staff. He rejoined his flagship, H.M.S. "Sheffield," at Annapolis.

The cruisers "Sheffield" and "Kenya" and other units of the squadron were due at Jamaica on 13th October.

It is understood that the "Kenya" and the frigates "Porlock Bay" and "Padstow Bay" will shortly be withdrawn from the Station, which will then have only one cruiser and two sloops.

PERSONNEL

ACCELERATED DEMOBILIZATION.—A decision of H.M. Government to accelerate the rundown of the Services will give the Royal Navy a difficult problem in organization and administration. The release of all men called up prior to 1st January, 1947, will be accelerated. This means that between now and the end of next March no less than 45,000 men will have to be passed through the demobilization depots—a rate of release twice that previously planned.

The outstanding effect of this decision will be that large numbers of men will leave the Service earlier than they expected. It will not, however, be possible to let all categories of ratings go equally quickly. In order that welfare and administrative services should not be disorganized during this period certain classes of ratings, such as Sick Berth Attendants, Stores and Writer Ratings, and Naval Aviation Ratings, will not have their releases accelerated to the same extent as the remainder. But even these men will leave the Service no later, and in the vast majority of cases earlier than they could previously have expected.

Looking ahead beyond the critical period of the next few months it is reasonable to forecast that by next March the post-war demobilization of the Royal Navy will virtually be completed. The Service will then be able to settle down to perfecting the organization of a peace-time Navy.

DARTMOUTH COLLEGE MEMORIAL BOOK.—Information relating to officers who served as Cadets or on the staff at the Royal Naval College, Dartmouth, and who fell during the War of 1939-45 is sought by the College authorities for a Book of Remembrance. Particulars should be sent to the Commanding Officer, and should include surname and Christian names, rank and age at the time of death, decorations, etc., dates of entering and leaving the College, house or term (where applicable), and indications of the circumstances of death and the locality in which the officer was serving at the time.

RATING PILOTS.—From 1st September, recruiting has been open for the category of rating pilot in the Royal Navy. During and before the War the majority of naval pilots were officers. In future rating pilots will provide two-thirds of all naval pilots. Candidates must be between 17 and 19 years of age; they must hold the school certificate, or its equivalent, with a minimum of four passes, one of which must be in mathematics; and they must be of the high medical standard required of all pilots in the Royal Navy and Royal Air Force. Suitable entrants will be offered a continuous service engagement of twelve years as probationary pilots. As up to 25 per cent. of officers may be drawn from the lower deck, there is a good chance of promotion to Commissioned rank. Candidates should apply to the Director of Naval Recruiting, Admiralty, or to any combined recruiting centre.

RELEASE OF MINERS.—In view of the urgent need for underground coal miners, the Admiralty in September offered conditional release to ex-miners serving as naval ratings or in the Royal Marines, in certain categories. Applicants must have had not less than six months experience of coalmining, either underground or on the surface; have completed six months naval service; be in medical category 1 and free from hernia; and agree to work underground in the mines.

DEATH OF EARL NELSON.—The great-great-nephew of Nelson, the fourth Earl, died at Trafalgar House, Downton, near Salisbury, on 30th September, 1947. The first Earl was the Admiral's elder brother. He was granted a pension of £5,000 a year "in perpetuity" to the holder of the title.

In December, 1946, the present Government introduced a Bill, which was passed in June, 1947, abolishing this pension on the death of the heir to the fourth Earl—his brother.

MATERIAL AND DOCKYARDS

NEW DESTROYERS.—The new weapons class destroyer "Scorpion," built and engined by J. Samuel White and Co., at Cowes, was commissioned for service on 24th September. She embodies many new developments in warship design; 365 feet in length, she has a beam of 38 feet. Her armament will consist of four 4 in. guns in twin turrets, and six smaller; also two quintuple 21 in. torpedo tubes. Her displacement will be 1,980 tons and speed 34 knots.

H.M.S. "BATTLEAXE," a second destroyer of the class, is to be the leader of the 6th Destroyer Flotilla. She has been doing acceptance trials and was due to be handed over by the builders, Messrs. Yarrow & Co., Ltd., Scotstoun, Glasgow, on 13th October. She was launched in June, 1945.

The "Battleaxe" will be commanded by Captain Sir Charles Madden, Bt., R.N., who will also serve as Captain (D) of the Flotilla.

TRAINING SQUADRON.—The battleship "Nelson" left the Training Squadron at Portland on 22nd September for Portsmouth en route to be laid up in reserve at Rosyth. The aircraft carrier "Victorious" is to replace her. The battleship "King George V," after refit at Devonport, will relieve H.M.S. "Howe" in the squadron.

REPAIRS TO H.M.S. "VOLAGE."—The destroyer "Volage," which was severely damaged by a mine off Corfu on 22nd October, 1946, left Malta on 20th August for steam trials. Her bows have been completely reconstructed and electrical and other installations renewed.

H.M.S. "PRESIDENT'S" REFIT.—Headquarters and training ship of the London Division, R.N.V.R., H.M.S. "President" was removed in July from her berth at Blackfriars for long refit at Chatham during which her appearance will be changed and much of the top hamper removed. The "President," formerly the sloop "Saxifrage," had been at Blackfriars since a refit in 1928. She was first based there in 1922.

BREAKING UP THE "WARSPITE."—The wreck of the battleship "Warspite," which was stranded on the rocks in Prussia Cove, Cornwall, in April, was sold on 28th August to Bristol scrap iron merchants. The task of dismantling is expected to last between two and three years.

RE-RIGGING H.M.S. "VICTORY"—The work of re-rigging H.M.S. "Victory" in No. 2 Dock in Portsmouth Dockyard was begun on 1st October. The "Victory" had not been re-rigged since she was brought into dry dock in 1923 and restored to her Trafalgar condition.

MARINE GAS TURBINE.—Marine gas turbine propulsion is being developed by the Admiralty, and a turbine of this type has been fitted experimentally in a coastal craft, M.G.B. 2009, a triple screw vessel. The turbine drives the central shaft and takes the place of one of the three internal combustion 125 B.H.P. petrol engines. In the gas turbine, gas instead of steam is used to rotate the turbine, and the gas is produced in a

generator of similar type to that used in a jet-propelled aircraft, although the ship is not jet-propelled. The Admiralty have other developments in hand, one of which is the construction of a marine gas turbine sufficiently powerful to propel an escort vessel.

NAVAL JET FIGHTER.—A new jet-propelled fighter, known as the N7/46, has been produced by Hawker Aircraft, Ltd., and, like the "Fury" and "Sea Fury" piston-engined fighters of the same firm, will be built in two versions, one to be land-based, the other to operate from carriers of the Royal Navy. The carrier-borne type is expected to provide the Fleet with an aircraft superior to any of its class in the World.

PORTLAND HARBOUR.—Concrete units of the "Phoenix" type used in the construction of the "Mulberry" harbour off the Normandy coast in 1944 are being used in the building of a prefabricated inner harbour at Portland for berthing "Battle" class destroyers, for which there is now insufficient accommodation. Each unit is 210 feet long and weighs 7,700 tons.

ROYAL NAVAL VOLUNTEER RESERVE

FORMATION OF AIR SQUADRONS.—Appointments were announced on 1st August of the following commanding officers for three of the four R.N.V.R. air squadrons mentioned in last quarter's JOURNAL :—

Lieutenant-Commander (A) P. Godfrey, to Fighter Squadron No. 1832, based at Culham, serving the London-Oxford area.

Acting Lieutenant-Commander (A) J. D. Murrice, to Fighter Anti-Submarine Squadron No. 1830, based at Abbotsinch, near Glasgow.

Acting Lieutenant-Commander (A) N. G. Mitchell, to Fighter Squadron No. 1831, based at Stretton, near Liverpool.

SUPPLEMENTARY RESERVE FLOTILLAS.—A number of members of the R.N. Volunteer Supplementary Reserve have voluntarily formed themselves into "flotillas" to make their own arrangements for training under the guidance of the Admiral Commanding Reserves. On 15th September, Vice-Admiral Sir Charles Morgan, Admiral Commanding Reserves, addressed a meeting of 850 former R.N.V.R. officers at Caxton Hall, at which an organization was formed to provide voluntary training in the London Flotilla, and 730 officers joined.

It is unfortunate that the Admiralty are not in a position to make any financial grant or to afford any facilities for training in H.M. Ships or Establishments, these enthusiastic naval volunteers.

ROYAL MARINES

NEW ORGANIZATION.—The reorganization of the Royal Marines in Great Britain, announced in the House of Commons on 2nd July, is now taking effect. Its aim is to give greater efficiency in the various forms of training and at the same time to save in man-power by about 1,000 officers and men.

Chatham takes over all pre-embarkation training and the preparation of drafts. Deal is responsible for preliminary recruit training, Portsmouth for training for sea service, and Plymouth for training for land service.

A proportion of Royal Marines and their families who are required to move are finding new accommodation. The pay and records offices at Portsmouth and Plymouth have been moved to Chatham, where a central pay and records system is being established.

ROYAL MARINE FORCES VOLUNTEER RESERVE.—Approval has been given for the formation of a Royal Marine Forces Volunteer Reserve (R.M.F.V.R.) and the whole question of Reserves is being considered by a Committee set up by the Board of Admiralty. It is probable that the initial R.M.F.V.R. Groups will be opened at Chatham and at Portsmouth. At a later date groups will be set up in London and in other parts of the country.

Details are not yet ready for publication, but the Reserve will closely resemble the R.N.V.R.; the main difference being that the R.M.F.V.R. will be organized in units.

The obligatory training will amount to forty instructions each year, each of two hours, and in addition reservists will be required to undergo a total of fifty-six days training in the first five years of their service in periods of approximately fourteen days each.

As far as is possible, reservists will join in their substantive or war substantive rank and full pay and allowances will be paid during continuous training.

It is probable that the age limit for enrolment will be 45 and that volunteers will have to possess the same medical standards as for the regular Corps.

DOMINIONS AND COLONIES

AUSTRALIA

NEW AIR ARM.—The Minister for the Navy—Mr. W. J. Z. Riordan, announced in Melbourne on 15th September the establishment of an Air Arm of the Royal Australian Navy, for which two light aircraft carriers are being bought from the Royal Navy. The first carrier, of the improved "Glory" type, should be delivered in September, 1948, or earlier; the second by September, 1949. Their crews will be 80 per cent. Australian. The scheme involves training 4,300 Australians in naval aviation, and the purchase of ninety modern carrier aircraft from Great Britain. Each carrier will operate thirty-five aircraft and have a large reserve.

MANUS ISLAND BASE.—Mr. Riordan stated at Canberra on 16th September that Manus Island, in the Admiralty Group, will be developed as one of the principal British bases in the Pacific and will be used both by the Australian Naval Squadron and by units of the British Pacific Fleet.

The following reference to Manus was made by the Melbourne Correspondent of *The Times* in an article on "Australian Defence" on 8th July:—

"A northern naval and air base will be established at Manus, the largest of the 160 islands in the Admiralty Group, lying about 380 miles North-West of Rabaul, in the mandated territory of New Guinea. Established by the United States forces, Manus was the principal Allied naval and air base in the South-West Pacific during the War, its excellent Seeadler Harbour having magnificent berthing, even for capital ships. Four airstrips were built near the Harbour, there was a seaplane repair base at its eastern end, and anchorages for over 300 ships of all kinds, which could obtain maintenance and repair facilities from shore establishments. The Royal Australian Navy's present northern base at Dreger Harbour, on the north-eastern corner of New Guinea, near Finschhafen, was established with the idea of moving 300 miles farther North to Manus, and has only about 200 men on it.

In the early part of 1946 the United States Navy had proposed to make Manus one of its principal Pacific bases, but peace-time economy has forced it to abandon the project. It is sometimes argued that the strongest possible inducements should have been offered to the Americans to retain Manus, because they alone could arm and man it adequately; but the Commonwealth Government has always insisted that the Americans, if they remained, must share Manus with other Allied Governments under a general policy of reciprocity in the South-West Pacific, and even though the Americans are now leaving, the assumption at Canberra is that their help would be assured were Manus threatened by a hostile force."

ROYAL NAVY'S VISIT TO MELBOURNE.—The aircraft carriers "Theseus" and "Glory" and their escorting destroyers "Cockade" and "Contest," under the command of Rear-Admiral G. E. Creasy, Rear-Admiral (Air), British Pacific Fleet, paid a ten days visit to Melbourne in July. The ships' companies were hospitably entertained and received gifts of food for their kinsfolk.

MINING MISHAP.—Two Australian naval men were killed and twenty-six injured, while another was missing, as a result of the minesweeper "Warrnambool" striking a mine on 13th September during minesweeping operations north of Cairns, Queensland.

SOUTH AFRICA

NEW MINESWEEPERS.—The minesweeper "Rosamund" was formally handed over to the South African Naval Forces at Devonport on 8th September, and the "Pelorus" at Chatham on 30th September, and received by the High Commissioner for South Africa, Mr. G. Heaton Nicholls. Speaking at Chatham, Mr. Nicholls said that the purchase of three warships by South Africa was a sign of the increasing responsibility South Africa was assuming in the defence of its shores. Until now the responsibility had been borne entirely by the United Kingdom.

RHODESIAN GIFT.—Under the will of Mr. John Austen, of Que Que, Southern Rhodesia, who died in 1942, the residue of the estate was left to the British Government to be devoted towards the provision of a ship for the Royal Navy. The desire was also expressed that the ship should be so named as to identify her with the town of Que Que, or, failing this, with Southern Rhodesia. The total amount which the Government has received under this bequest is about £63,000. To give effect to Mr. Austen's wishes, the King has approved that a fast fleet replenishment vessel shall be named the "Bulawayo." The ship took part in the Autumn refuelling and re-storing exercises of the Home Fleet off Portland.

NAVAL DESPATCHES

The following Naval Despatches have been published during the past quarter :—

7th August, 1947. Sinking of the German Battle-Cruiser "Scharnhorst" on 26th December, 1943, by Admiral Sir Bruce A. Fraser, K.C.B., K.B.E., Commander-in-Chief, Home Fleet.

14th August, 1947. The Dieppe Raid (Operation "Jubilee"), 18/19th August, 1942, by Captain J. Hughes-Hallett, R.N., Naval Force Commander.

18th September, 1947. The Battle of Sirte on 22nd March, 1942, by Admiral Sir Henry H. Harwood, K.C.B., O.B.E., Commander-in-Chief, Mediterranean Station.

2nd October, 1947. The Attack on St. Nazaire, 1942, By Admiral of the Fleet Sir Charles M. Forbes, G.C.B., D.S.O., Commander-in-Chief, Plymouth.

16th October, 1947. Sinking of the German Battleship "Bismarck" on 27th May, 1941, by Admiral Sir John C. Tovey, K.C.B., D.S.O., Commander-in-Chief, Home Fleet.

FOREIGN NAVIES

BRAZIL

The four-masted naval training ship "Almirante Saldanha" paid a week's visit to Plymouth from 27th September. This was the first visit of a unit of the Brazilian navy to the United Kingdom since 1936.

The officers and ship's company (including sixty cadets under training) visited Dartmouth and other naval establishments and places of interest in and around Plymouth.

CHILE

The naval transport "Presidente Errazuriz," with thirty-nine cadets on board, paid a four days' visit to Portsmouth from 24th September. The officers and ship's company visited naval establishments in Portsmouth, and a party of forty-five officers and men visited London.

CHINA

TSINGTAO TRAINING CENTRE.—A Chinese Naval Training Centre was set up in December, 1945, under joint Chinese-American naval administration at Tsingtao. A recent American press report says "it is one of the few examples of close working co-operation between Chinese and Americans in this land to-day."

Chinese officers to the number of 256 and 2,024 ratings have passed out of the Centre after undergoing technical or specialist courses.

ALLOCATION OF JAPANESE WARSHIPS.—It is reported that twenty-three seaworthy Japanese warships, three of which are destroyers, have been allocated to China.

FRANCE

NEW CONSTRUCTION.—*The Navy* reports that "in spite of financial stringency, the construction was authorized on 6th August of a 32-knot fleet aircraft carrier with a displacement of over 15,000 tons."

It was pointed out, when this vote was introduced, that the "Arromanches" (ex-H.M.S. "Colossus") and the "Dixmude" (ex-U.S.S. "Biter") were only on loan and, if they had to be returned, the French Navy would not have a single carrier.

NORWAY

Effect has not been given to the projected transfer of H.M.S. "Arethusa" to the Norwegian Navy, referred to in last quarter's JOURNAL.

It appears that the Norwegian Parliament has decided not to accept the British offer notwithstanding the naval requirement for a larger class of ship than a destroyer for training cruises.

The motor yacht "Philante," which served in the Royal Navy during the War as an anti-submarine patrol vessel, has been acquired by Norway as a Royal Yacht.

SPAIN

REMODELLED CRUISERS.—The reconstruction and modernizing of the Spanish cruisers is being continued. Work on the "Galicia" and "Miguel de Cervantes" has been completed, and that on their sister ship "l'Amirante Cervera" is in hand. The renovation of the older "Mendez-Núñez" is about complete.

The "Canarias" is to be taken in hand at a later date.

UNITED STATES

FLEET ADMIRAL NIMITZ RETIREMENT.—The Chief of Operations—Fleet Admiral Chester W. Nimitz, has announced that he will retire from active naval duty in mid-December.

THE ATLANTIC FLEET.—Admiral William P. Blandy, commanding the U.S. Atlantic Fleet, stated lately that, with 400 ships and 10,000 men, it was about twice as big as before the War.

He also said that the Navy Department is continuing experiments with guided missiles fired from naval vessels and that tests are being made on submarines to give a greater submerged speed and a longer period of submerged endurance.

ARCTIC EQUIPMENT.—Four submarines and three other ships are to be specially equipped for Polar operations. Two submarines are to be modified to enable them to transport a hundred fighting men each up to 3,000 miles under water; a third will be a cargo carrier; and the fourth a "Polar picket craft."

It is also proposed to refit two dock-landing vessels and one attack ship for operating in Polar waters.

AN ALL-JET NAVY AIR FORCE.—Rear-Admiral Leslie C. Stevens, Navy Director of Aeronautical Research and Development, has forecasted that in ten years time the U.S. Fleet will have an all jet-propelled air force. "We are no longer thinking about the conventional type of aircraft used in the War" he stated.

TRANSFER OF CRUISERS.—Four pre-war cruisers are earmarked for transfer to South American Powers; the "St. Louis" for Peru; the "Boise" to Chile; and the "Nashville" and "Phoenix" to Brazil.

ARMY NOTES

GREAT BRITAIN

H.M. THE KING

The King has given orders for the appointment of the Princess Margaret Rose as Colonel-in-Chief, The Highland Light Infantry (22nd August, 1947).

On 24th October the King inspected the Riding Troop, Royal Horse Artillery, at St. John's Wood Barracks and was pleased to give directions for the unit to be renamed The King's Troop, Royal Horse Artillery.

The Queen (Colonel-in-Chief) visited York on 1st August and was present at a Service of Dedication of Memorial Windows in York Minster in remembrance of members of The King's Own Yorkshire Light Infantry.

The Princess Elizabeth (Colonel, Grenadier Guards) visited the Guards Depot, Caterham, on 29th July and inspected the 14th Company of the Grenadier Guards.

The Princess Elizabeth, as Colonel-in-Chief, on 20th September accepted the Freedom of Stirling on behalf of The Argyll and Sutherland Highlanders.

The Duke of Gloucester attended a ceremonial parade of the Corps of Royal Military Police which was held at the Inkerman Barracks, Woking, on 23rd July.

On the same day His Royal Highness presented, on behalf of the King, a new Standard to the 3rd Carabiniers at Quebec Barracks, Bordon.

The Duke of Gloucester, as Colonel-in-Chief, on 23rd October inspected the Royal Army Service Corps Headquarters Station at Aldershot, where His Royal Highness took the Salute at a passing-out parade and presented the Belt of Honour to the Champion Cadet.

The Duchess of Gloucester, as Colonel-in-Chief, on 7th August accepted the Freedom of the Borough of Berwick-upon-Tweed on behalf of The King's Own Scottish Borderers. Her Royal Highness was entertained to luncheon by the Mayor and afterwards attended the ceremony of the laying up of the Colours of the 2nd Battalion of the Regiment.

The Duchess of Gloucester, as Colonel-in-Chief, was present on 15th August at the At Home of The Northamptonshire Regiment on the County Ground, Northampton.

The King has approved the following appointments :—

TO BE AIDE-DE-CAMP GENERAL TO THE KING.—General Sir Montagu G. N. Stopford, K.C.B., K.B.E., D.S.O., M.C. (22nd August, 1947).

TO BE AIDES-DE-CAMPS TO THE KING.—Lieut.-Colonel (temporary Brigadier) E. W. Langlands, O.B.E., I.A. (20th January, 1947); Colonel (temporary Brigadier) G. G. Mears, C.B.E., D.S.O., M.C. (19th June, 1947); Colonel (temporary Brigadier) C. Cansdale, C.B.E. (7th July, 1947); Colonel (temporary Brigadier) C. Campbell, C.B.E., M.I.Mech.E. (7th June, 1947); Colonel (temporary Brigadier) J. G. E. Tiarks (20th June, 1947); Colonel (temporary Brigadier) F. S. Siggers, C.B.E., M.C. (22nd August, 1947).

TO BE COLONELS COMMANDANT.—Of the Royal Artillery, Lieut.-General Sir Sidney C. Kirkman, K.B.E., C.B., M.C. (17th July, 1947); of the Royal Electrical and Mechanical Engineers, Major-General Sir E. Bertram Rowcroft, K.B.E., C.B., M.I.Mech.E., M.I.E.E. (6th November, 1947).

TO BE COLONELS OF REGIMENTS.—Of The Durham Light Infantry, Colonel (hon. Brigadier) J. A. Churchill, C.B.E., D.S.O., M.C. (27th August, 1947); of the 10th Gurkha Rifles, General Sir A. F. Philip Christison, Bt., K.B.E., C.B., D.S.O., M.C. (18th July, 1947); of The Duke of Wellington's Regiment, General Sir A. F. Philip Christison, Bt., K.B.E., C.B., D.S.O., M.C. (1st November, 1947); of The King's Own Royal Regiment, Lieut.-Colonel (hon. Brigadier) J. H. Hardy, C.B.E., M.C. (1st September, 1947); of The Somerset Light Infantry, Lieut.-General Sir John G. des R. Swayne, K.C.B., C.B.E. (15th October, 1947); of The Bedfordshire and Hertfordshire Regiment, Major-General

Sir Reginald F. S. Denning, K.B.E., C.B. (1st January, 1948); of The South Lancashire Regiment, Colonel (hon. Major-General), E. C. Beard, C.B., C.B.E., M.C. (1st January, 1948); of The West Yorkshire Regiment, General Sir William J. Slim, G.B.E., K.C.B., D.S.O., M.C., A.D.C. (12th May, 1947).

ARMY COUNCIL

SECRETARY OF STATE FOR WAR.—Mr. E. Shinwell succeeded the Rt. Hon. F. J. Bellenger as Secretary of State for War and President of the Army Council on 8th October, 1947.

VICE-CHIEF OF THE IMPERIAL GENERAL STAFF.—The King has approved the appointment of Major-General G. W. R. Templer, C.B., C.M.G., D.S.O., O.B.E., Director of Military Intelligence, as Vice-Chief of the Imperial General Staff with the temporary rank of Lieut.-General in succession to Lieut.-General Sir Frank Simpson, K.B.E., C.B., D.S.O., as from February, 1948.

APPOINTMENTS

GREAT BRITAIN.—Major-General G. N. Wood, C.B., C.B.E., D.S.O., M.C., has been appointed Commander, 53rd (Welsh) Infantry Division (T.A.) and Mid-West District (1st August, 1947).

Lieut.-Colonel (temporary Brigadier) L. K. Lockhart, C.B.E., M.C., has been appointed Commander, 5th Anti-Aircraft Group, with acting rank of Major-General (1st October, 1947).

T/Brigadier G. W. E. Heath, C.B.E., D.S.O., M.C., is to become Commander, 1st A.A. Group, with acting rank of Major-General (December, 1947).

Major-General C. F. Loewen, C.B., C.B.E., D.S.O., is to become Commander, Northumbrian District and 50th Infantry Division, T.A. (January, 1948).

Major-General J. Y. Whitfield, C.B., D.S.O., O.B.E., is to become Chief of Staff, Northern Command (January, 1948).

Major-General M. S. Chilton, C.B., C.B.E., is to become Commander, East Anglian District (March, 1948).

Lieut.-General Sir Frank Simpson, K.B.E., C.B., D.S.O., is to become G.O.C.-in-C., Western Command (March, 1948) in succession to Lieut.-General Sir Brian G. Horrocks.

WAR OFFICE.—Lieut.-General Sir James Steele, K.B.E., C.B., D.S.O., M.C., has been appointed Adjutant-General to the Forces (22nd September, 1947).

Brigadier A. J. H. Cassels, C.B.E., D.S.O., is to become Director, Land/Air Warfare, War Office, with acting rank of Major-General (January, 1948).

Major-General C. M. Smith, C.B., C.B.E., M.C., is to become Director of Supplies and Transport, War Office (March, 1948).

UNITED NATIONS.—Lieut.-General Sir Richard L. McCreery, K.C.B., K.B.E., D.S.O., M.C., at present G.O.C.-in-C., B.A.O.R., is to be British Representative, Military Staff Committee United Nations. (June, 1948).

GERMANY.—Lieut.-General Sir Brian G. Horrocks, K.B.E., C.B., D.S.O., M.C., at present G.O.C.-in-C., Western Command, is appointed G.O.C.-in-C., British Army of the Rhine (April, 1948).

AUSTRIA.—Lieut.-General A. Galloway, C.B., C.B.E., D.S.O., M.C., has been appointed High Commissioner and Commander-in-Chief, British Troops, Austria (October, 1947).

MALAYA.—T/Major-General D. A. L. Wade, C.B., O.B.E., M.C., has been appointed G.O.C., Malaya Command (September, 1947).

MALTA.—Major-General W. R. Revell-Smith, C.B., C.B.E., D.S.O., M.C., A.M., is to become G.O.C. Troops, Malta (January, 1948).

INDIA.—Major-General E. N. Goddard, C.B., C.I.E., C.B.E., M.V.O., M.C., has been appointed officiating G.O.C.-in-C., Southern Command, with acting rank of Lieut.-General (5th July, 1947).

PROMOTIONS

The following promotions have been announced :—

Generals.—The following Lieut.-Generals to be Generals :—Sir A. F. Philip Christison, Bt., K.B.E., C.B., D.S.O., M.C. (19th August, 1947, with seniority 29th September, 1946) ; Sir Sidney C. Kirkman, K.B.E., C.B., M.C. (22nd August, 1947).

Lieut.-Generals.—The following Major-Generals (temporary Lieut.-Generals) to be Lieut.-Generals :—K. N. Crawford, C.B., M.C. (19th August, 1947, with seniority 13th December, 1944) ; F. G. Wrisberg, C.B., C.B.E. (22nd August, 1947, with seniority 2nd September, 1944).

Major-Generals.—The following Colonels (temporary or acting Major-Generals) to be Major-Generals :—J. A. Baillon, C.B.E., M.C. (29th July, 1947, with seniority 24th August, 1944) ; P. G. Calvert-Jones, C.B.E., D.S.O., M.C. (19th August, 1947, with seniority 30th October, 1944) ; H. J. Parham, C.B.E., D.S.O., A.D.C. (22nd August, 1947, with seniority 22nd January, 1945) ; H. J. Snelling, C.B., C.B.E., I.A. (10th May, 1947) ; C. H. Boucher, C.B., C.B.E., D.S.O., I.A. (3rd June, 1947) ; J. S. Ballentine, C.I.E., I.A. (23rd June, 1947, with seniority 31st May, 1947) ; D. A. L. Wade, C.B., O.B.E., M.C. (4th October, 1947, with seniority 22nd November, 1944) ; J. E. C. McCandlish, C.B., C.B.E. (4th October, 1947, with seniority 24th February, 1945).

The following Colonels (usually acting Major-Generals) to be temporary Major-Generals :—W. H. Stratton, C.V.O., C.B.E., D.S.O. (7th April, 1947) ; B. Temple, O.B.E., M.C. (3rd May, 1947) ; J. E. C. McCandlish, C.B., C.B.E. (14th September, 1947) ; W. A. Crowther, C.B.E., D.S.O., I.A. (1st July, 1946) ; V. J. E. Westropp, C.B.E. (8th April, 1947) ; A. C. T. Evanson, M.C. (15th January, 1946) ; C. R. A. Swynnerton, D.S.O. (12th August, 1947).

The following Colonels (temporary Brigadiers) to be acting Major-Generals :—H. P. Sparks, C.B.E., M.C. (29th March, 1947) ; G. K. Bourne, C.B.E. (23rd September, 1947) ; L. K. Lockhart, C.B.E., M.C. (1st October, 1947).

The following Lieut.-Colonel (temporary Brigadier) to be acting Major-General :—E. H. W. Cobb, C.B.E. (9th August, 1947).

Major-General His Highness the Sultan of Johore (Sultan Sir Ibrahim, G.C.M.G., G.B.E.), Johore Military Forces, has been appointed to be Honorary Major-General in the British Army (17th September, 1947).

The following to be local Major-General :—Colonel (temporary Brigadier) R. Hilton, D.S.O., M.C., D.F.C. (16th August, 1947).

RETIREMENTS

The following General Officers have retired :—Major-General Sir Kenneth M. Loch, K.C.I.E., C.B., M.C., with hon. rank of Lieut.-General (29th July, 1947) ; Major-General R. H. Wordsworth, C.B., C.B.E., Indian Army (25th February, 1947) ; General Sir Daryl G. Watson, G.C.B., C.B.E., M.C., A.D.C.Gen. (19th August, 1947) ; General Sir Miles C. Dempsey, K.C.B., K.B.E., D.S.O., M.C., A.D.C.Gen. (22nd August, 1947) ; Major-General W. C. Hartgill, C.B., O.B.E., M.C., K.H.S., late R.A.M.C. (9th September, 1947) ; Major-General M. E. Dennis, C.B., C.B.E., D.S.O., M.C. (4th October, 1947) ; Major-General Sir Humfrey M. Gale, K.B.E., C.B., C.V.O., M.C., with hon. rank of Lieut.-General (14th October, 1947).

REORGANIZATION OF THE INFANTRY

On 14th October the War Office announced the following changes in the organization of the Infantry.

The October, 1946, reorganization formed the Infantry of the Line into fourteen groups of regiments. Within these groups, regiments were to retain one or two Regular battalions, surplus Regular battalions being placed in turn in temporary suspended animation for limited periods.

All infantry regiments will now be reduced to one Regular battalion each. Plans for making this reduction are being considered and the regiments will be consulted in due course. All regiments will retain their identities.

The grouping system is unchanged except that The Middlesex Regiment, which alone forms the machine gun group, is now to be incorporated in the Home Counties Group as a normal infantry regiment because machine gun battalions are no longer required in the Army.

Primary Training Centres and Infantry Training Centres are to be abolished. Each Arm is to have Arm Basic Training Units to which men will go for their Basic Training before joining active units. Basic Training Units in the Infantry will be run by Regular Infantry battalions. A modified form of the selection procedure which determines a man's Arm of service will now be carried out before call-up. The full selection procedure, formerly carried out at Primary Training Centres will follow at the Army Basic Training Unit to determine his employment in that Arm and to ensure that no major mistakes have been made.

The position of the old Regimental Depots, which were attached to the P.T.Cs, has not yet been finally settled, but each regiment will retain a small Regimental Headquarters, possibly located in County barracks.

There is no change in the organization of the Foot Guards.

RESTORATION OF TROPHIES

A ceremonial parade was held at the Royal Hospital, Chelsea, on 28th September, when Colours and battle trophies that have reposed for many years in the Hospital were restored to the keeping of ten regiments which have historical claims to them.

The trophies were handed over to the Colonels of the regiments. They included :—

A standard of the 7th Dragoon Guards—handed over to the 4/7th Dragoon Guards.

Colours of the 36th Regiment deposited in Chelsea Hospital in 1847—handed over to The Worcestershire Regiment.

Colours of the 40th Regiment, laid up in 1867—handed over to The South Lancashire Regiment.

Colours of a battalion of the French 21st Demi-Brigade captured at Alexandria in 1801 by Private Lutz of the Queen's Germans—handed over to The Manchester Regiment.

A battalion eagle of the French 82nd Regiment awarded to the 7th Fusiliers on the surrender of Fort Bourbon, Martinique, in 1809—handed over to The Royal Fusiliers.

The staff of the eagle of the French 8th Regiment captured by Sergeant Masterson of the 87th Regiment at the Battle of Barrosa in 1811—handed over to The Royal Irish Fusiliers.

A stand of Colours of a Hessian regiment captured at Badajoz in 1812 by the 4th Regiment—handed over to The King's Own Royal Regiment.

An eagle of the French 22nd Regiment captured at Salamanca in 1812 by Ensign Pratt of the 30th Regiment—handed over to The East Lancashire Regiment.

An eagle of the French 62nd Regiment captured at Salamanca in 1812 by Lieutenant Pierce of the 44th Regiment—handed over to The Essex Regiment.

A guidon of the United States 1st Hartford Dragoons and a Colour of the United States 68th Regiment, both captured at Bladensburg in 1814 by the 85th Regiment—handed over to The King's Shropshire Light Infantry.

MISCELLANEOUS

K.O.Y.L.I.—The Queen (Colonel-in-Chief) spent most of 1st August in York as guest of The King's Own Yorkshire Light Infantry. Her Majesty attended a special Minden Day service in York Minster and took part in the presentation of a Book of Honour containing the names of 1,200 members of the Regiment who lost their lives in the 1939-45 War. She inspected a parade which included Regular and Territorial units of the Regiment, cadets and a large number of Old Comrades. All were wearing Minden roses in remembrance of the regimental part in the battle of 1759. A bouquet of Minden roses was presented to the Queen.

CENTRAL MEDITERRANEAN FORCE.—The General Headquarters of the British C.M.F. moved in September from Venice to Udine, about 100 miles to the North-East, so as to make a more economical use of manpower and to release as much requisitioned accommodation as possible.

THE SOUTH LANCASHIRE REGIMENT.—The Prime Minister, Mr. Attlee, who served with the Regiment in the 1914-18 War, was present on 5th October at a service in Warrington parish church when a memorial window in the regimental chapel was dedicated in commemoration of those of The South Lancashire Regiment who lost their lives in the recent war.

THE KING'S OWN ROYAL REGIMENT.—The regimental museum of The King's Own Royal Regiment (4th Foot) in Lancaster possesses a complete gallery of prints or photographic copies of pictures of the Colonels of the Regiment since it was raised in 1680, with the exception of the ten officers named below :—

1688—Sir Charles Orby.

1717—The Hon. Henry Berkeley.

1719—The Hon. Charles Cadogan.

1756—Major-General Alexander Duroure.

1765—The Hon. Robert Brudenell.

1798—General George Morrison.

1835—Lieut.-General John Hodgson.

1876—General Studholme John Hodgson.

1890—Lieut.-General William Sankey.

1892—Lieut.-General William Wilby.

Should anyone know of the existence of a portrait of any of these officers, he is asked to communicate with the Secretary, The King's Own Royal Regiment, Bowerham Barracks, Lancaster.

DOMINIONS

AUSTRALIA

POST-WAR ARMY

Further details have been announced regarding Australia's post-war Army.

The Permanent Forces, with an establishment of 19,000, will consist of :—

A Field Force of one independent brigade group (including three infantry battalions and an armoured unit, plus necessary supporting units) with an establishment of 4,470.

Fixed Establishments (fixed defences, base and administrative troops and training units) totalling 13,380 men.

Cadres for instructional, administrative and other duties with the Citizen Forces totalling 1,150 men.

The Citizen Forces will have an establishment of 50,000. They will comprise a field force of two infantry divisions, one armoured brigade group and selected corps units (48,850 men), and Fixed Defences (1,150 men). The annual Citizen Force training periods are to comprise 14 days' camp and 24 days' home training. Officers and non-commissioned officers will be encouraged to attend additional courses at Army schools.

Personnel of both the Permanent and Citizen Forces are to be obtained by voluntary enlistment.

Civilian recruiting for the Permanent Forces began on 18th August.

RHODESIA

ROYAL RHODESIA REGIMENT.—It was announced on 28th August that the King has become Colonel-in-Chief of The Royal Rhodesia Regiment. This territorial regiment of Southern Rhodesia received the prefix "Royal" on the King's visit last April.

INDIA AND PAKISTAN

GURKHA UNITS.—It was announced in Delhi on 8th August that, subject to negotiations regarding terms and conditions, agreement in principle had been reached between the Governments of the United Kingdom, India and Nepal about the future of Gurkha units of the Indian Army.

The first and second battalions of the 2nd, 6th, 7th and 10th Gurkha Rifles and their regimental centres have been allotted for service under His Majesty's Government. All other existing Gurkha battalions remain in the Army of the Dominion of India.

No Gurkha will be compelled to serve against his will either under the Dominion of India or H.M. Government.

FOREIGN

UNITED STATES

UNIVERSAL MILITARY TRAINING.—According to the U.S. *Infantry Journal*⁽¹⁾, Universal Military Training is generally expected and wanted; President Truman has repeatedly advocated it, Governor Thomas E. Dewey, titular head of the Republican Party has pronounced its adoption as "our duty to provide a programme of defence involving participation by all able-bodied young American men." So far, however, it has been delayed by political obstruction in Congress.

CHIEF OF STAFF OF THE ARMY.—The same publication says that it is an open secret that General Omar N. Bradley will succeed General Eisenhower as Chief of the Staff of the Army on the retirement of the latter next year.

INTEGRATION OF COAST AND FIELD ARTILLERY.—General Jacob L. Devers, writing in the U.S. *Coast Artillery Journal*, for September-October, says that the War Department favours combining the Coast Artillery and Field Artillery into a single arm. Legislation to effect this will be sought as soon as practicable. Meanwhile the Field Artillery School at Fort Sill is to become the Artillery School with an Anti-Aircraft and Guided Missile Branch at Fort Bliss, Texas, and a Seacoast Branch at Fort Scott, California. Instruction at the Artillery School will include all types of artillery weapons.

CORRIGENDA

In the issue of the JOURNAL for August 1947, page 488, for "The Gloucester Regiment" read "The Gloucestershire Regiment."

⁽¹⁾ The R.U.S.I. now exchanges its JOURNAL with most of the principal American Service publications, which will be found in the Reading Room.—EDITOR.

AIR NOTES

GREAT BRITAIN

H.M. THE KING

The Air Ministry announced on 24th September that the King has honoured the Royal Air Force Regiment by becoming Air Commodore-in-Chief.

The Air Ministry announced on 23rd August that Group Captain (Acting Air Commodore) Alban Spencer Ellerton has relinquished his appointment as an Additional Air Aide-de-Camp and has been appointed an Air Aide-de-Camp to the King, in succession to Air Commodore William Ernest Staton, with effect from 1st January, 1946.

THE AIR COUNCIL

On 8th October, the Right Hon. Philip John Noel-Baker was succeeded as Secretary of State for Air by the Right Hon. Arthur Henderson, formerly Minister of State for Commonwealth Relations.

It was announced on 3rd September that Air Chief Marshal Sir John Slessor, Air Council Member for Personnel, had been appointed Commandant of the Imperial Defence College, in succession to General Sir William Slim, who relinquishes the appointment on 31st December.

On 18th September, the appointment was announced of Air Marshal Sir Hugh W. L. Saunders as Air Council Member for Personnel. Sir Hugh Saunders was appointed Air Officer Commanding-in-Chief, Bomber Command, on 16th January, 1947, and was formerly Air Officer Commanding, R.A.F., Burma, from August, 1945.

On 20th October, the appointment was announced of Air Marshal Sir James Milne Robb to be Vice-Chief of the Air Staff, from 15th December, 1947, vice Air Marshal Sir William F. Dickson.

APPOINTMENTS

Air Vice-Marshal T. A. Langford-Sainsbury has been appointed Air Officer in Charge of Administration at B.A.F.O. Headquarters, Germany.

Air Vice-Marshal F. J. W. Mellersh has been appointed Air Officer Commanding, No. 21 Group, Flying Training Command.

Air Marshal Sir Ralph A. Cochrane is to be Air Officer Commanding-in-Chief, Flying Training Command, vice Air Marshal Sir Arthur Coningham, who is retiring from the R.A.F. at his own request.

Air Marshal Sir Brian E. Baker, is to be Air Officer Commanding-in-Chief, Transport Command, vice Air Marshal Cochrane.

Air Marshal Sir William Forster Dickson is to be Air Commander-in-Chief, R.A.F., Mediterranean and Middle East, from February, 1948, vice Air Marshal Sir Charles E. H. Medhurst, who will then have completed his tour of duty in the post.

Air Vice-Marshal Sir William Elliot is to be Air Officer Commanding-in-Chief, Fighter Command, with the acting rank of Air Marshal, from 17th November, 1947, vice Air Marshal Sir James Robb, appointed V.C.A.S.

Air Vice-Marshal Frank L. Hopps has been appointed Air Officer Commanding, No. 19 Group, Coastal Command.

Air Vice-Marshal Thomas A. Warne-Browne has been appointed Senior Technical Staff Officer, Mediterranean and Middle East Command.

Air Vice-Marshal Sir Hugh P. Lloyd has been appointed Air Commander-in-Chief, Air Command, Far East, with the acting rank of Air Marshal.

Air Vice-Marshal Sir Arthur P. M. Sanders has been appointed Air Officer Commanding-in-Chief, British Air Forces of Occupation, Germany, with the acting rank of Air Marshal.

Air Vice-Marshal A. B. Ellwood has been appointed Air Officer Commanding-in-Chief, Bomber Command, with the acting rank of Air Marshal.

Air Vice-Marshal A. L. Paxton has been appointed Director-General of Personnel II, Air Ministry.

Air Vice-Marshal C. B. S. Spackman has been appointed Senior Air Staff Officer, British Air Forces of Occupation, Germany.

Air Vice-Marshal R. Ivelaw-Chapman has been appointed to be R.A.F. Instructor at the Imperial Defence College.

Air Commodore H. J. Roach has been appointed Air Officer Commanding, No. 43 Group, Maintenance Command, with the acting rank of Air Vice-Marshal.

Air Chief Marshal Sir Philip Joubert relinquished the post of Director of Public Relations at the Air Ministry at the end of September. He was succeeded by Mr. L. M. MacBride, who will hold the post under the new title of Chief Information Officer, Air Ministry. Mr. MacBride was formerly in charge of the United Kingdom Information Services in Australia.

Air Vice-Marshal R. P. Willock has relinquished his appointment as Civil Air Attaché in Washington to take up new duties in Great Britain.

Mr. Patrick Johnson, recently Vice-President of Magdalen College, Oxford, has been appointed Director of Studies at the Royal Air Force College, Cranwell.

PROMOTIONS

The following promotions were made as from 1st July, 1947:—

Air Vice-Marshal to Air Marshal.—Sir Leslie N. Hollinghurst, K.B.E., C.B., D.F.C. (temp. Air Marshal); Sir Ralph S. Sorley, K.C.B., O.B.E., D.S.C., D.F.C. (temp. Air Marshal); Sir Leonard H. Slatter, K.B.E., C.B. (acting Air Marshal); Sir Alan Lees, K.C.B., C.B.E., D.S.O., A.F.C.; Sir Brian E. Baker, K.B.E., C.B., D.S.O., M.C., A.F.C.; Sir Hugh W. L. Saunders, K.B.E., C.B., M.C., D.F.C., M.M., (acting Air Marshal); Sir William F. Dickson, K.B.E., C.B., D.S.O., A.F.C. (acting Air Marshal).

Air Commodore (temp. Air Vice-Marshal) to Air Vice-Marshal.—G. E. Gibbs, C.I.E., C.B.E., M.C.; S. F. Vincent, C.B., D.F.C., A.F.C.; F. L. Hopps, C.B., C.B.E., A.F.C.; A. C. Stevens, C.B.; W. M. Yool, C.B., C.B.E.; F. J. Fogarty, C.B., D.F.C., A.F.C.; S. D. Macdonald, C.B.E., D.F.C.; V. E. Groom, C.B., C.B.E., D.F.C.; J. D. Breakey, C.B., D.F.C.; R. Ivelaw-Chapman, C.B.E., D.F.C., A.F.C.; F. F. Inglis, C.B., C.B.E.; Sir Basil E. Embry, K.B.E., C.B., D.S.O., D.F.C., A.F.C.; J. N. Boothman, C.B., D.F.C., A.F.C.; R. S. Blucke, C.B., C.B.E., D.S.O., A.F.C.

Air Commodore (acting Air Vice-Marshal) to Air Vice-Marshal.—H. T. Lydford, C.B.E., A.F.C.; A. C. Sanderson, C.B.E., D.F.C.; E. J. Kingston-McCloughry, C.B.E., D.S.O., D.F.C.

Group Captain to Air Commodore.—C. A. Stevens, C.B., C.B.E., M.C.; P. H. Mackworth, C.B.E., D.F.C., (acting Air Vice-Marshal); J. A. Gray, C.B., C.B.E., D.F.C., G.M.; G. G. Banting, C.B., C.B.E.; G. S. Hodson, C.B., C.B.E., A.F.C., (acting Air Vice-Marshal); Sir Harry Broadhurst, K.B.E., C.B., D.S.O., D.F.C., A.F.C.; C. W. Busk, C.B., M.C., A.F.C.; W. J. Seward, C.B.E.; A. R. Wardle, C.B.E., A.F.C.; F. W. Long, C.B.; C. B. R. Pelly, C.B.E., M.C.; D. A. Boyle, C.B., C.B.E., A.F.C.; G. R. Beamish, C.B., C.B.E.; A. C. H. Sharp, D.S.O., A.F.C.; A. G. Bishop, C.B.E., A.F.C.; A. J. Rankin, O.B.E., A.F.C.; W. E. Staton, C.B., D.S.O., M.C., D.F.C.; S. N. Webster, C.B.E., A.F.C.; E. D. Barnes, A.F.C.; B. H. C. Russell, C.B.E.; C. McC. Vincent, C.B., D.F.C., A.F.C.; G. H. Vasse, C.B.E.; G. R. C. Spencer, C.B.E.; E. S. Burns; D. Macfadyen, C.B.E.; A. P. Revington, C.B.E.; W. J. M. Akerman, C.B.E.; B. V. Reynolds, C.B.E.; N. C. Ogilvie-Forbes, O.B.E.; R. B. Jordan, C.B., D.F.C.; G. E. Nicholletts, A.F.C.; F. J. Fressanges, C.B.; L. T. Pankhurst, C.B.E.; D. F. W. Atcherley, C.B.E., D.S.O., D.F.C.; T. G. Pike, C.B., C.B.E., D.F.C.; N. S. Allinson, C.B.; G. D. Harvey, C.B.E., D.F.C.; A. D. Gillmore, C.B.E.; T. N. McEvoy, C.B.E.; R. L. R. Atcherley, C.B.E., A.F.C.; H. L. Patch, C.B.E.; J. R. Whitley, C.B., C.B.E., D.S.O., A.F.C.; A. McKee, C.B.E., D.S.O., D.F.C., A.F.C.

PROMOTION AND TRANSFER.

Group Captain O. W. de Putron, C.B.E., A.D.C., is promoted to the substantive rank of Air Commodore and transferred to the Secretarial Branch, retaining his seniority, with effect from 1st January, 1947.

TECHNICAL BRANCH.—

Air Vice-Marshal to Air Marshal.—Sir Cyril B. Cooke, K.C.B., C.B.E., (acting Air Marshal).

Air Commodore (temp. Air Vice-Marshal) to Air Vice-Marshal.—G. A. H. Pidcock, C.B.E.; T. A. Warne-Browne, C.B., C.B.E., D.S.C.; C. W. Weedon, C.B., C.B.E.; W. E. Theak, C.B.E.; E. B. Addison, C.B., C.B.E.; G. F. Smylie, C.B., D.S.C.; G. D. Daly, C.B.E., D.F.C.; C. E. H. Allen, C.B., D.F.C.; C. N. H. Bilney, C.B.E.; C. P. Brown, C.B., C.B.E., D.F.C.; E. H. Richardson, C.B.E.; H. E. Forrow, C.B., O.B.E.; F. E. Vernon, C.B., O.B.E.; R. G. Hart, C.B., C.B.E., M.C.; H. W. Heslop, C.B., O.B.E.; L. Dalton-Morris, C.B.E.; R. C. Wansbrough; J. F. Titmas, C.B.E.; J. G. Franks; A. F. Hutton, D.F.C.; H. D. Spreckley, O.B.E.; W. A. Opie.

EQUIPMENT BRANCH.—

Air Commodore to Air Vice-Marshal.—F. N. Trinder, C.B.E. (acting Air Vice-Marshal).

Group Captain to Air Commodore.—G. Scarrott; B. E. Essex.

SECRETARIAL BRANCH.—

Group Captain to Air Commodore.—I. L. Wincer, C.B.E.; J. S. Griffiths, C.B.E.

GRANT OF ACTING RANK

EQUIPMENT BRANCH.—Air Commodore T. G. Bowler, C.B.E., is granted the acting rank of Air Vice-Marshal (4th June, 1947).

MEDICAL BRANCH.—Air Commodore T. McClurkin, K.H.P., is granted the acting rank of Air Vice-Marshal (4th August, 1947).

PERSONNEL

SELECTION BOARD FOR COMMISSIONS.—Officers on Extended or Short Service Commissions and regular airmen in ground branches who are recommended for permanent Commissions will in future be selected by the R.A.F. Selection Board, Ramridge House, Weyhill, Andover, Hants. (President, Air Commodore H. M. Massey, D.S.O., M.C.). It is hoped that first selections under the new procedure will be published in January, and after that lists will be promulgated half-yearly in April and October.

Airmen must be at least 25 before they can be recommended, and normally only group A tradesmen, with an upper age limit of 30, will be considered for Technical Branch Commissions.

THE ROYAL AIR FORCE COLLEGE.—The R.A.F. College, Cranwell, completed its first year in its peace-time role on 10th October. Four courses of Flight Cadets have been entered during this year and by January, 1949, Cranwell will be restored to its full capacity of 320 Cadets, all of whom will be destined for the General Duties Branch of the Royal Air Force. The first output will come in the Summer of next year. The senior course, which will then pass out, consists of Cadets who at the time the College reopened had already commenced flying training under war conditions.

Important changes have taken place to ensure that the vast experience gained in war in selection and training technique will find its place in the reconstituted College. In particular, the selection system has been amplified so that each Cadet is given aptitude tests to determine suitability for flying duties. Following success in the Common Entrance Examination for the three Services held by the Civil Service Commissioners, each candidate for the R.A.F. College undergoes comprehensive selection tests at an R.A.F. Selection Board which is staffed by experienced R.A.F. Officers. This Board lasts for three days.

The scope of the College is to be extended. Hitherto, only officers for flying duties had been trained there. Now a new Wing has been added to give equivalent training to Cadets for the Equipment and Secretarial Branches of the Royal Air Force. This Wing for the present will be located at R.A.F. Station, Digby. It will have a capacity for 110 Cadets. Although this Wing is some distance from Cranwell it will be an integral part of the College.

BIGGIN HILL CHAPEL.—An appeal, which has the support of Mr. Churchill, is being made for £20,000 to restore St. George's Chapel of Remembrance at Biggin Hill R.A.F. Station as a memorial to nearly 500 fighter pilots who lost their lives during operations from this sector. It will be built on the site of the operations room, to replace the chapel destroyed by fire last December. The treasurer is Mr. H. J. Ingle, Lloyds Bank, Uxbridge, Middlesex.

LOST BURMA AIR CREWS.—Search teams of the R.A.F. have concluded a fifteen-months tour of Burma in an effort to ascertain the fate of air crews missing during the War. When hostilities ceased, some 300 R.A.F. and Dominion aircraft, involving about 1,000 men, were unaccounted for. The search crews succeeded in tracing some 200 men.

AIR WAR HISTORY.—A further appeal was made in July by Air Chief Marshal Sir Philip Joubert to former members of the R.A.F. to send details of their war experiences to the Head of the Air Historical Branch, Air Ministry, Whitehall. The response to the first appeal was satisfactory, but more material is needed of actions or events, personally experienced or witnessed, which were typical of the spirit of the Service, or the conditions and atmosphere in which operations were conducted.

BATTLE OF BRITAIN ANNIVERSARY

The seventh anniversary of the Battle of Britain in 1940 was commemorated in the week from 14th to 21st September. On the 14th, a reunion festival, sponsored by the *Daily Telegraph*, was held in the Royal Albert Hall in aid of the R.A.F. Benevolent Fund and the R.A.F. Association. On the 15th, a fly-past of 130 aircraft over London was led by a single Hawker Hurricane, as a symbol of those which took part in the Battle.

On 20th September, the R.A.F. was "at home" to the public at some seventy stations and all the flying commands staged fly-pasts as part of their training programmes. Nearly 330,000 people visited the stations. There was also a combined R.A.F. and Royal Observer Corps exercise. At Biggin Hill, the air display was watched by Mr. Churchill, as Honorary Air Commodore of No. 615 (County of Surrey) Squadron, who addressed the crowd from the control tower and later, in the officers' mess, spoke to some of the pilots who took part in the Battle of Britain.

On Sunday, 21st September, there was a service of thanksgiving for victory in Westminster Abbey. The King was represented by Air Chief Marshal Sir Roderic Hill, and among those who attended were the Prime Minister and Mrs. Attlee, Mr. Philip Noel Baker—Secretary for Air, Marshals of the Royal Air Force Lord Tedder and Lord Trenchard, Air Chief Marshal Lord Dowding, and representatives of Australia, Canada, New Zealand and South Africa. Thanksgiving services were also held in other parts of the country.

TRANSATLANTIC MISSION OF NO. 617 SQUADRON

No. 617 Squadron of sixteen Lincoln aircraft, Bomber Command, left Binbrook, Lincolnshire, on 23rd July and landed the same night at Gander, Newfoundland, on the first stage of a goodwill mission to the United States and Canada. Their itinerary included visits to New York, Sacramento, Los Angeles, Fort Worth, Michigan, Nebraska, Texas and Alabama, and Toronto and other Canadian air stations. The leader of the mission was Group Captain W. J. P. Thomson and the commander of the squadron Wing Commander G. D. Milne. The squadron took part in the observance of Air Force Day in the United States on 1st August, when it flew from Andrews Field, Washington, up the East coast to Boston, returning to take part in a mass fly-past over New York

during the afternoon. Air Marshal Sir Hugh Saunders, Air Officer Commanding-in-Chief, Bomber Command, left England for Washington on 24th August in a Lincoln bomber to join the squadron on the concluding part of its mission. The squadron returned to Binbrook on 9th September, after flying 20,000 miles, and was welcomed by Air Vice-Marshal C. E. N. Guest, Commanding No. 1 Group, Bomber Command. The crews said they had had an enjoyable time and were loaded with presents for their families and friends.

INDIAN OCEAN TRAINING FLIGHT

Three R.A.F. Sunderland flying boats of No. 205 Squadron, Air Command, Far East, based on Ceylon, made a 10,000 miles training flight across the Indian Ocean to Durban and back in September. On the outward flight the aircraft called at Male, in the Maldives Islands, 550 miles South-West of Ceylon, and at the Seychelles Islands, 1,400 miles from Male. Their first land-fall in Africa was at Mombasa, whence they flew over Portuguese East Africa, calling at Mozambique and Lourenco Marques. On arrival at Durban on 19th September, they were greeted by wireless from the ground by the Director-General of Air Force, South Africa—Brigadier J. Durrant, and a reply was made from the air from the leading flying boat by the Air Officer Commanding, Ceylon—Air Commodore A. R. Wardle, the senior officer in charge of the flight. The return journey began on 24th September, a call being made at Mauritius.

SCANDINAVIA FLIGHT

At the invitation of the Norwegian and Danish Governments, three Sunderland Mark V flying boats of No. 230 Squadron left Calshot on 22nd September on a week's cruise of Scandinavia, visiting Stavanger, Oslo and Copenhagen. Air Marshal Sir Leonard Slatter, Air Officer Commanding-in-Chief, Coastal Command, flew in one of the Sunderlands and the mission was led by Wing Commander J. L. Crosbie.

CONFERENCE AT OLD SARUM

The largest conference of officers of the R.A.F. and Dominion Air Forces since the War was held at the R.A.F. station at Old Sarum from 11th to 15th August. The object was to study the strategy and conduct of the Anglo-American bomber offensives from January, 1943, to the end of the War. The Chief of the Air Staff, Marshal of the R.A.F. Lord Tedder, presided, and the conference was officially known as "Operation Thunderbolt." Mr. A. V. Alexander, Minister of Defence, and Mr. P. J. Noel-Baker, Secretary for Air, attended the final session.

Addressing aeronautical correspondents after the conference, Lord Tedder said that just as the invention of gunpowder revolutionized the technique of warfare, so the atom bomb would do so, but in the last resort war was a human conflict and human nature did not change as did technique. The conference had, therefore, been studying human nature and human affairs as exercised and affected during the recent war. He was sure there were useful lessons to be learned. One of the important problems was to strike a right balance between the three Services. He did not believe they should be combined, because their problems were different, but they should work to a common end. It might have been expected that after two wars everyone would be convinced that war did not pay, but it seemed that that lesson had still to be learned.

EXERCISE WITH AIRBORNE TROOPS

On 22nd and 23rd September, Transport Command of the R.A.F. and the 2nd Parachute Brigade Group of the Army co-operated in "Exercise Longstop"—the first airborne manoeuvres in England since the War ended. The respective commanders were Air Vice-Marshal A. L. Fiddament, Commanding No. 38 Group, and Brigadier R. H. Bellamy, Commanding the 2nd Parachute Brigade. The exercise began on the evening of 22nd September, when about 700 men and equipment were dropped to capture the airfield at Netheravon, Wiltshire. Next morning this airfield was to have been secured by a battalion group of the 2nd Parachute Brigade landed by parachute and glider,

but because of a high wind it was not possible to drop the troops. However, 900 parachute troops with their equipment were dropped to reinforce their comrades who were holding the airfield. They were followed by ten Halifax transports dropping guns, jeeps and gun teams. Field-Marshal Lord Montgomery, Marshal of the R.A.F. Lord Tedder and Mr. Philip Noel-Baker, Secretary for Air, watched the demonstrations.

PILOTLESS ATLANTIC FLIGHT

A Skymaster aircraft of the United States Army Air Force landed in Britain on 22nd September after completing the first trans-Atlantic automatic flight of about 2,500 miles. A button was pressed in the aircraft at Stephenville, Newfoundland, at 10.15 p.m., G.M.T., on Sunday, 21st September, the aircraft took off and it landed at Brize Norton, Oxfordshire, at 10.20 a.m., G.M.T., on the 22nd. No one touched the controls from before the take-off until after the machine had landed. The United States Embassy in London stated: "Before taking off, the plane was set for a completely automatic course for a certain length of time; it was also set to fly a pre-determined course for a certain length of time as well as to fly successively three different courses at a pre-determined time. It flew to a home station frequency in England. It followed that frequency to a localizer frequency at Brize Norton, after which it set down its landing gear automatically and made an automatic landing." Early on 7th October, the aircraft took off from Lyneham, Wiltshire, and landed the same evening at Stephenville, Newfoundland. The entire return journey was also made by radio control, but as the field was not equipped for the purpose, the pilot operated the machine for landing. The machine in both flights was under the charge of Colonel J. M. Gillespie of the United States Air Force, with whom were two United States pilots, one navigating officer, three sergeants and three technical experts. Wing Commander F. R. Jeffs, R.A.F., also made the flights as an observer for the R.A.F.

At the Handley Page airfield at Radlett, Herts, on 25th September, a successful demonstration was given of the first British-designed electric automatic pilot, developed at the request of the Government by Smiths Aircraft Instruments, of Cricklewood. It could be used for completely automatic flight in the same way as the Sperry auto-pilot in the United States Skymaster.

ROCKET-PROPELLED AIRCRAFT EXPERIMENTS

The first practical tests with rocket-propelled model aircraft for supersonic flight began at the R.A.F. station, St. Eval, Cornwall, on 8th October. A Vickers-Armstrong rocket-propelled model was released into flight from its parent Mosquito aircraft when flying at nearly 400 m.p.h. at 36,400 feet over a position one mile West of St. Mary's, Scilly Isles. The model aircraft fell clearly away and, after gliding for 15 seconds as arranged, the rocket motor automatically started. Telemetering equipment in the model transmitted intelligence to the ground station on the Scilly Isles. This showed that the first attempt to reach supersonic speed—762 m.p.h. at sea level—was unsuccessful, the speed of the model not exceeding 600 miles an hour. The experiments were to continue, and altogether twenty-four rocket aircraft of six types were to be flown under automatic control.

WOMEN'S AUXILIARY AIR FORCE

Appointments.—The following were announced on 7th October :—

Group Officer E. B. Richdale to be W.A.A.F. Staff Officer, Headquarters, Reserve Command.

Wing Officer M. H. Barnett, to be Inspector, W.A.A.F., with the acting rank of Group Officer.

Wing Officer N. M. Salmon to be Deputy-Director, W.A.A.F., with the acting rank of Group Officer, to succeed Group Officer P. C. Greig, who is leaving the service in December.

Staff Conference.—A conference of W.A.A.F. staff officers was opened at Westfield College, London, on 18th September, by Marshal of the R.A.F. Lord Tedder. He said that the W.A.A.F. would be an essential part of the Air Force of the future and could be a

stabilising and steadying influence on the Service as a whole. It had, therefore, a tremendous responsibility to the R.A.F. The conference discussed prospects of employment for women in technical trades.

Reserve Flying Branch.—Trained women pilots, it was announced on 4th October, may now enrol as members of the W.A.A.F. Volunteer Reserve List (Flying) and be given a refresher course in flying with a view to their employment on ferrying and communications duties in non-operational areas during the periods of emergency. This is the first step, states the Air Ministry, towards the formation of a flying branch for women who are already qualified pilots, including those who served in the Air Transport Auxiliary during the War.

The conditions of service are similar to those for men pilots in the R.A.F.V.R., although the form of engagement will be a signed undertaking and not attestation. Candidates should normally be below 30 years of age, and must have done at least 100 hours solo flying. They will enrol for an initial period of two years. Uniform and flying clothing will be supplied free of charge. A retaining fee of £25 a year will be paid. When called up for week-end or evening training reservists will receive an hourly rate of 1s., with a maximum payment of 6s., and for their fifteen days continuous training they will receive 7s. a day.

ROYAL AIR FORCE VOLUNTEER RESERVE

Recruiting for the R.A.F.V.R. started in March this year, and twelve flying schools are now operating in various parts of the country. Three more are due to open in the near future and others will follow. More than 500 "week-end" pilots are now flying in their spare time in the post-war R.A.F. Volunteer Reserve. Of the 513 pilots so far enlisted about 350 ex-war-time officers have been granted Commissions. The largest response has been in the London area. Over a hundred ex-R.A.F. pilots are flying again in Tiger Moths at Panshanger Airfield, near Hatfield, whilst another ninety-one use their leisure time to fly at Fairoaks, Surrey.

All pilots accepted are granted a £35 annual flying training bounty as well as travelling and other allowances. Their flying training amounts to 40 hours each year.

Qualified pilots wishing to join the Volunteer Reserve should apply to one of these Reserve Centres:—Woodley (Reading), Brough (Hull), Derby, Perth, Cambridge, Rochester, Desford (Loughborough), Wolverhampton, Sywell (Northampton), Stanmore Park (Middlesex), Chessington (Surrey), or Titchfield (Fareham, Hants).

DOMINIONS

INDIA AND PAKISTAN

Prior to 15th August, the Royal Indian Air Force was composed of ten squadrons, two transport and eight fighters, one of which was serving with the British Commonwealth Occupation Forces in Japan. On that date, the R.I.A.F. was divided between the two new governments and a Pakistan Air Force and an Indian Air Force were formed. Seven fighter squadrons and one transport squadron were allotted to India and the remaining two fighter squadrons and one transport squadron became the Pakistan Air Force. In addition, two A.O.P. flights were formed with the equipment of No. 659 Squadron of the Royal Air Force and incorporated in the two new Air Forces, one flight to each.

Air Marshal Sir Thomas W. Elmhirst, K.B.E., C.B., A.F.C. who, prior to the partition of India, was Chief of Inter-Service Administration at Armed Forces Headquarters, New Delhi, had been appointed to command the Indian Air Force. Air Marshal Elmhirst has his Headquarters at Delhi and is responsible to the Minister of Defence of the Dominion of India for operations, training, future planning and day-to-day administration of the Indian Air Force.

Air Vice-Marshal A. L. A. Perry-Keene, C.B., O.B.E., former Air Officer in charge of Administration at A.H.Q., India, is to command the Pakistan Air Force. His responsibilities to the Minister of Defence of the Dominion of Pakistan are identical with those of Air Marshal Elmhirst to the Dominion of India.

Air Marshal H. S. P. Walmsley, C.B., C.B.E., M.C., D.F.C., former A.O.C. in C., retains his command of such R.A.F. formations as remain in India and Pakistan, but, under his new title of Deputy Supreme Commander (Air) he has relinquished operational and, to a large extent functional and administrative control to the newly-created Pakistan and Indian Air Forces. He still controls the ex-R.I.A.F. training and maintenance establishments for the benefit of both Air Forces until such time as they are in a position to take over control.

FOREIGN

RUSSIA

AVIATION DAY, MOSCOW.—Soviet Aviation Day usually takes place on or about the 18th August, but this year it was brought forward to the 3rd in order to avoid clashing with the celebrations for the 800th anniversary of Moscow. The main event of the day was the flying display held at Tushino airfield.

Stalin, together with Chief Marshal of Aviation Vershinin, Marshal Koniev (C.-in-C. Land Forces), Admiral Yumachev (C.-in-C. Naval Forces), Marshal Vasilevski (Chief of General Staff), General Bulganin (Minister of Armed Forces) and many other high-ranking members of the Politburo watched the display from the balcony of the Chkalov Club.

The Display opened with two formation flights of trainers, flying at about 2,000 feet, the first forming the letters S-T-A-L-I-N and the second flight forming a five-pointed star. Various other small formations followed carrying out aerobatics including one formation of five aircraft piloted by women who played "follow my leader." The first part of the display ended with a helicopter ascent which proved rather a feeble finale. All these events were carried out by aircraft belonging to the *Osoaviakhim* (Society for the Defence of the Soviet Union and the development of the aviation and chemical industries). The standard of formation was fair, but there was a noticeable amount of clumsy flying.

The second part of the display consisted of aerobatics in military fighter aircraft, including jets, and a parade of new types (mostly jets). It was notable as, indeed, was the whole display, for the raising for one afternoon of the "iron curtain" on the Soviet's latest aircraft. The highlight of the day was provided by "Heroes of the Soviet Union," Colonel Trachenko, Lt.-Colonel Sereda, and Makor Pakhomov piloting three scarlet YAK-9's in a brilliant display of formation aerobatics. A qualified observer called this "a performance high in the ranks of international aviation, carried out within the limits of the airfield at a reasonable height coupled with perfect flying."

A mock-battle produced a good effect with flak simulation; several aircraft were "shot down in flames" trailing black smoke from wing tips and tail. Jet fighters attacked from the front quarter in a slight dive, half-rolled off the top and then went down to an attack from the rear quarter. Sections broke alternatively above and below the bombers.

Included in a fly-past were three TU-4's, twenty-seven TU-2's, three heavy bombers (Soviet version of B-29), twenty-seven IL-10's, twenty-seven YAK-9's and twenty-seven LA-9's. Then came twelve LA-8's fitted with intermittent propulsive ducts. A single LA-7 followed flying fast across the airfield and pulling up in a vertical climb to demonstrate speed and rate of climb.

The finale to the second part of the display was most interesting as new and projected types of jet aircraft were demonstrated. Including twin-jets, single-jets, a four-engine jet and a "sweep-back" jet, these new designs were attributed to designers Yakovlev, Lavochkin, Gourevich, Mokoyan, Soukhoi, Tupolev and Ilyushin.

The standard of flying was generally high in the second part of the display and the pilots of the jet aircraft demonstrated the speed and manoeuvrability of these types to advantage. The third part of the display included heavy and long-range types of aircraft and parachute dropping. Aircraft flown were the IL-18 transport capable of seating 67 passengers, 6 flights of three IL-12's (27 passengers, four crew), two PE-8 bombers, and an unidentified 72-passenger liner. The display finished with a mass parachute descent by 576 men from 36 IL-2 aircraft, 16 men jumping from each aircraft. It is interesting to note that civil aviation has not been overlooked in the Soviet race for air supremacy with the Western Powers.

The display showed an improvement on that of last year, and the latest types of aircraft were undoubtedly shown for some very good purpose, perhaps to show that the U.S.S.R. is not so far behind the rest of the World in aeronautical developments, perhaps to impress the Soviet satellites, and to demonstrate to the masses the success of the latest five-year plan.

UNITED STATES

AIR SPEED RECORD.—Since the Americans re-captured the World's Air Speed Record in June by flying a P.80 (Shooting Star) at an average speed of 623.8 m.p.h., it has twice been broken by a naval D.558 (Skystreak).

The first attempt was made in August with a Skystreak piloted by Commander Turner F. Caldwell, who flew four times over the three-kilometre course at Muroe Dry Lake, California, at an average speed of 640.7 m.p.h. Five days later a Skystreak, piloted by Major Marion Carl, of the U.S. Marine Corps, over the same course attained the average speed of 650.6 m.p.h.

The D.558 is an experimental aircraft built by the Douglas Aircraft Company for the Navy for research in the trans-sonic region, and is powered by a General Electric J.35 (TG-180) turbo jet engine. Three of these aircraft have been built.

NEW APPOINTMENTS.—General Carl Spaatz, Commanding General of the U.S.A.F., has announced the following new appointments within the U.S.A.F.

Major-General Robert W. Harper to be Commanding General of Air Transport Command. Prior to this appointment he was Director of the Air Division, U.S. Group Control Council.

Major-General Robert M. Webster, the previous Commanding General of Air Transport Command, has been appointed Commander of the First Air Force at Mitchell Field, N.Y.

Major-General Robert W. Douglass to be Commanding General of Air Training Command. Prior to this appointment he was Commanding General of the First Air Force.

Major-General Idwal H. Edwards, who recently relinquished his appointment as Commanding General of the U.S.A.F. in Europe, has been appointed Assistant Chief of Air Staff for Personnel at U.S.A.F. Headquarters, Washington.

Brigadier-General John F. McBlain has succeeded General Edwards as Commanding General of the U.S.A.D. in Europe. Until his new appointment he was Commanding General of the XII Tactical Air Command.

BOMB TESTS IN GERMANY.—Three B.29's (Superfortress) of the Strategic Air Command, based in Germany at Giebelstadt airfield, are to carry out tests with new types of penetrating bombs against the German submarine assembly factory at Farge, near Bremen. Included in the types of bombs to be dropped by the B.19's are thirty 25,000-lb. "Amazon" and "Samson" bombs. Owing to the proximity of villages and occupied dwellings the bombs will contain no high explosive.

NEW BOMBER.—Further details of the B-36 Bomber, described as the "largest of the World's combat planes," have been published in the American Press. It is stated that the gross weight of each of these aircraft is 278,000 lbs., and they will cost about \$3,000,000 a-piece.

Originally designed for transoceanic bombing and advertised as the "10,000 miles, 10,000 lb. of bombs ship," their operational radius of action will, it is thought, be about 3,000 miles, "too short for transoceanic or transpolar bombing." In effect, the introduction of these giant bombers does not make intercontinental war possible without intermediate bases.

The B-36 is expected to carry some 72,000 lbs. of bombs normally, and 86,000 lbs. under suitable conditions. It will have a longer operating range than any other known bomber. The most serious criticism of it is, however, that it cannot be produced on any sort of quantity basis, and in any major war this is an indispensable requirement.

According to this report, the first B-36 will be ready about November; the last of the hundred on order not until February, 1949.

REVIEWS OF BOOKS

GENERAL

Bombing and Strategy. By Admiral Sir Gerald Dickens, K.C.V.O., C.B., C.M.G. (Sampson Low, Marston & Co., Ltd.) 7s. 6d.

This thoughtful little work is a distinctly valuable contribution to a study of the principles of modern war. It is well-balanced in views and arguments and, as such, a valuable corrective to extreme schools of thought.

The contents are well summarized by the late Admiral Sir Herbert Richmond in an illuminating Foreword. We are reminded, yet again, that as an island Power, our primary objective in any war must be "the enemy forces threatening our sea power." Not until we have neutralized those forces are we in a safe position to carry our offensive forward to final victory. If we neglect that principle we invite defeat.

Admiral Dickens then invokes the lessons of all wars to show the danger of pursuing two objects, a tendency which, in the late war, produced the result that "neither the effects expected from bombing were attained, nor was the necessary protection given from the air to the vital sea communications of the Empire . . ." so that "the War came within a narrow margin of being lost through the sinking of thousands of tons of shipping . . . and the deaths of some 30,000 British seamen."

Thirdly, he argues that our efforts to wage 'total war' against the cities and lives of the enemy in an attempt to break the will of the people failed and brought in its train the very bitter fruits of a costly victory. The reader would do well to study this aspect of the late and any potential war further in Major-General Fuller's *Armament and History*, reviewed in the JOURNAL for February of this year.

Lastly the author maintains that the adoption of extreme methods in waging war prejudices the ultimate object—a stable and enduring peace. This obviously applies not merely in retrospect to the policy of unlimited bombing advocated by one school of thought in the late war, but also to the prospects of a future 'push-button' war of annihilation.

This book must have been written, except for the last chapter, before the appearance of Sir Arthur Harris' *Bomber Offensive*. Only in that chapter does the author deal specifically with the very different outlook on war to be found in that work. The latter certainly needed an antidote, and Admiral Dickens has supplied it in this same and scholarly treatise, which can be warmly recommended.

The War : Sixth Year. By Edgar McInnis. (Oxford University Press.) 12s. 6d.

This volume deals with operations from October, 1944, onwards and completes Professor McInnis's history of the 1939-1945 War. It maintains the high standard of its predecessors and can be heartily recommended. The book is very well produced.

The Quill. Edited by Captain E. G. C. Beckwith, T.D., 8th Bn. The Sherwood Foresters. (Country Life, Ltd.) 2 Guineas.

This is a collection of prose, verse and sketches of considerable and varied interest by officer prisoners of war in Germany, 1940-1945.

Captain Beckwith had the misfortune to be captured in Norway in May, 1940, and to spend five years as a prisoner of war in Germany. He soon started a camp magazine which eventually was named *The Quill*. The book now under notice contains a selection of about 5 per cent. of the original material contributed to the magazine. It is a handsome volume, well printed on good paper, with excellent reproductions of the illustrations, many of which are in colours. Major-General Sir Victor Fortune, K.B.E., C.B., D.S.O., writes a Foreword.

NAVAL

Brassey's Naval Annual for 1947. Edited by Rear-Admiral H. G. Thursfield. (William Clowes & Sons, Ltd.)

The 57th *Brassey* lives up to its long reputation and, in spite of difficulties in production and material, maintains its traditional balance between original articles and

records of many matters which the Service reader wants to have handy for reference, with the tables and other regular features which have been published in much the same form since the 'eighties.

Naturally it is to the original articles that the reader turns first and in this Annual he is offered a good variety. The chapter on the Naval Prospect is by the Editor, and here is a subject on which there is room for a wide range of opinion. Admiral Thursfield echoes Mahan's wise dictum that it is possible to be too quick in discarding the old as well as too slow in adopting the new, and he stresses the value of weapons which proved their worth in the late war while he fully appreciates the potentialities of new inventions. On the possibilities of the atomic bomb and other weapons, he wisely refuses to prophesy. Dr. Herbert Rosinsky, the American writer, is willing to go rather further in his chapter on The Role of Sea Power in Future Global Warfare, although with careful reservations. His historical summary of sea power, although brief, is worth careful study by every young officer, and has some very shrewd criticisms of the political position to-day and, among many other things, the tendency to neglect infiltration in the possibilities of an atomic *blitzkrieg*.

In his chapter on the Future of Naval Aviation, "Volage" is naturally and very properly prejudiced in favour of the new weapons. He makes a good case and suggests certain developments of material which are not at all unlikely, while he deprecates the present popular tendency to conclude that enough has already been learned about new weapons to justify revolutionary changes in Empire strategy, to abolish navies and armies and to concentrate on rockets and aircraft. He expresses doubt as to whether the abolition of catapults in fighting ships was sound, even with the need for an increased anti-aircraft armament, and gives reasons for thinking that some new arrangement will have to be made; all this will interest many naval officers, as will other suggestions concerning manning and organization. Major Oliver Stewart has an interesting chapter on the Operational Future of the Flying Boat—the Cinderella of Service aviation in which he has great faith and for which he is able to foresee many useful functions especially for the Navy. His conclusion is that "the flying boat has much need for a few champions in high places. Its case for consideration is complete, yet does not appear to have been noticed."

Attention is naturally paid in this year's *Brassey* to the lessons of the late war, two or three being selected for special mention. Captain Cyril Falls, writing on the Collaboration of Sea, Land and Air Forces, condenses a great deal of material in a small space and covers a period from the XVIIIth Century to the late war in the Pacific with particular application to the latter; he, too, leaves the atomic bomb as a note of interrogation, but makes some excellent remarks on the Ministry of Defence in peace-time. In Inter-Allied Naval Co-operation in War, "Liaison" covers all except the U.S. Navy whose "adequate description would need a chapter to itself." He deals with the work of the various navies and the problems which have to be overcome with regard to liaison, training and welfare.

Sir Archibald Hurd's chapter—"The Maritime Industries at the Cross Roads," is very timely and worthy of the careful attention of politicians as well as sailors.

"The Defence of Australia," by Lieutenant-Commander Geoffrey Rawson, R.A.N., gives a concise summary of how at least part of the Commonwealth is regarding its great problem. "Eye Witness" gives a useful account of the 1946 Atomic Bomb Trials. (Readers of the JOURNAL will, of course, have had the essentials in the November number of last year.) Captain W. B. Puleston, U.S.N., condenses the Rise and Fall of Japanese Sea Power into eighteen pages—no easy task, so he must be forgiven for glossing over some events which undoubtedly had a great influence.

Familiar features, "The Naval Year," by Captain E. Altham, R.N., and "Foreign Navies," by Mr. F. E. McMurtrie, cover, as usual, every important event in their respective fields and are particularly handy for reference. The former criticizes the tendency to reduce the time spent at sea or even in sea-going ships by the Navy generally. This is even more to the point since it was written.

At a time when there is a tendency for all Service matters to be distorted by the popular Press and the voting public is particularly liable to be carried away by enthusiasm for anything new, the Editor and contributors to this Annual are to be particularly congratulated on the admirably sane outlook of all the articles; without being unduly conservative, they maintain that there are still many things to be proved and lessons to be learned before indulging in revolutionary changes.

The long overdue thorough overhaul of the reference section has been undertaken by Mr. R. J. Daniel and the difficulties he has had to contend with in present conditions are obvious. It is unfortunate, but understandable, that it could only be brought down to the beginning of the year 1947. A small defect which might easily be remedied is in the builders' column of the ships' tables which sometimes quotes the name of the firm and sometimes the district, even with the same yard. Other tables and plans follow familiar lines.

Jane's Fighting Ships. Edited by Francis E. McMurtrie, A.I.N.A. (Sampson Low, Marston). £3 3s. od.

This year's *Jane* provides strong evidence, should it be needed, that the days of navies are by no means over, for it continues to chronicle a huge collection of surface ships and submarines still kept "in being" by all Powers with any pretence to importance in the World.

The most numerous post-war discards are shown to be in the heaviest and lightest classes—in battleships and in anti-submarine and landing craft. This was to be expected for, on the one hand—whatever the future of the battleship as a type—many of those which survived the war are suffering from old age and arduous service; on the other hand, many of the anti-submarine craft are too slow for future needs, while landing craft in such vast quantities as were produced could not possibly be laid up in store for eventualities.

So we find a warning that this is the last appearance of the four "Royal Sovereigns." The "Warspite" has passed with no higher tribute than "sold for scrapping," and by next year the "Queen Elizabeth" will have followed suit. The remaining sisters of that once famous class—the "Malaya" and "Valiant," are ending their days as accommodation ships. The U.S. battleships "Arkansas," "New York," "Texas," "Nevada" and "Pennsylvania" have been discarded and, we are told, they will be followed shortly by the "Idaho" and "Mexico," while the "Mississippi" is being reconstructed as a gunnery training ship.

Nevertheless, the World's fleets still include 35 battleships of the largest type, divided amongst the nations as follows: Great Britain, 7; Argentine, 2; Brazil, 2; Chile, 1; France, 2; Italy, 2 (retained); Russia, 3 (including the ex "Royal Sovereign"—lent, and two old coast-defence battleships); Turkey, 1; United States, 15 (not including the "Idaho" and "Mexico").

Jane confirms the statement in this JOURNAL's Navy Notes of February last, that the armaments of the U.S. battleship "Kentucky" and battle cruiser "Hawaii" are being modified in the course of construction and are likely to include rocket projectors.

Allusion to new construction for the British Navy makes depressing reading. "Very little progress has been made towards completion of the twelve new aircraft carriers left in hand at the end of the War, beyond the launching of the 'Albion' and 'Centaur.' Some of these ships have been towed away from their building yards to be . . . completed at some future date." Also, we read, "A similar state of affairs exists with regard to the four cruisers that remain under construction." Destroyers have done rather better as "almost all the twenty-four of the 'Battle' class have now passed into service."

The reduction of the fleets of the two principal naval Powers has afforded the smaller navies an opportunity to acquire cheaply surplus destroyers, frigates, corvettes and minesweepers. Numerous vessels of these classes which formerly flew the British or American ensigns are now flying those of Belgium, Brazil, Chile, China, Denmark,

the Dominican Republic, Egypt, France, Greece, Honduras, the Netherlands, Norway, Peru, Russia, Siam, Turkey and Venezuela. None of these changes will disturb the balance of sea power to any appreciable extent; but their significance lies in the fact that all those nations obviously attach considerable value to a surface fleet, even of small ships. One reason for this, without doubt, is that they have learnt the value of "showing the flag" afloat.

This always invaluable publication has nothing very novel to portray this year; but the Editor has done much good work in correcting, tidying and improving. All concerned are to be congratulated on the result.

Trinity House. By Commander Hilary P. Mead, R.N. (Sampson Low, Marston & Co., Ltd.) 15s.

This book will undoubtedly please the general reader for it is attractively written and contains much information of interest. It is to be feared, however, that the author, who has so much to his credit in his own particular line, may disappoint the student and particularly those who have always taken a keen interest in the history of the Corporation of Trinity House. It should be noted in justice to him that he makes no claim that his work is exhaustive or final, or that it gives any indication of the present-day activities of the Corporation, and also that he was anxious not to worry the overworked Elder Brethren for information. Moreover, he has dug out, often at the cost of what has obviously been very careful research, a number of interesting facts which will be new to most, if not all, his readers, and read in conjunction with one of the existing histories of Trinity House, which are all long out of print, this book gives some invaluable sidelights.

Unfortunately, all these pieces of research, many of which are on comparatively trivial subjects, are not linked up with the important features of the history, with the result that many subjects are left "in the air" and the ordinary reader may sometimes find it rather difficult to understand what they are all about. An instance of this is the chapter on Pilots and Pilotage which, curiously enough, does not appear in the index and which makes no mention of the important XIXth Century Acts on the subject. The chapter on Ballastage, covering the activities of Trinity House in dredging the River, makes no mention of the final dispute which put an end to the matter. No mention is made of the troubled early days of the Nore Lightship and the part which Trinity House played. These and many other similar omissions even in a book which makes no claim to being comprehensive, make it somewhat disappointing to anybody who wants to study the interesting history of Trinity House.

MILITARY

History of the Great War. Military Operations, France and Belgium, 1918, Vol. IV. Edited by Brigadier-General Sir James Edmonds, C.B., C.M.G. (H.M. Stationery Office), 27s. 6d.

The regret is often expressed that the official History of the Great War was not completed before the beginning of the 1939-45 War, but there are compensations. Had the final volumes been rushed out on the eve of that war they would soon have been relegated to the library shelf and forgotten. Volumes issued now will command much more attention. Moreover, they will be read in the light of recent history; the lessons taught by them will be compared with the lessons of the recent war, and interesting comparisons between the two will be made and useful lessons drawn. They may even induce military students to dip deeper into the past, and to examine the truth of the assertion that "history repeats itself." The volume under review throws a good deal of light on this question. For this reason it would be well worth while persevering with, even if the only result were to obtain the wisdom concentrated in the eight pages modestly headed "Reflections."

These Reflections, and indeed the whole volume, throw a vivid light on the problem of inter-Allied relations. No subject of military strategy and higher leading in war

could be more important for us, for it is our almost invariable fate in big wars—being an island Power—to have to fight with Allies on the field of battle. The history of such relations in the past has not been a happy one. As far back as the days of Queen Elizabeth we see its disadvantages. Sir Francis Vere was let down by the Flemings at the Battle of Nieuport, and narrowly escaped disaster. The Duke of Marlborough suffered frustration in his campaigns of 1703 and 1705, owing to the inaction of his Dutch and German Allies, respectively. The unfortunate Duke of Cumberland owed his misfortunes almost entirely to the same cause at Fontenoy owing to the Dutch, and at Lauffelt owing to the Austrians. The equally unfortunate Duke of York suffered in precisely the same way, and we might have won the war of the French Revolution in 1793 had it not been for lack of co-operation by his Austrian Allies at the little-known battle of Caesar's Camp. The Duke of Wellington had similar difficulties at the hands of his Spanish Allies, notably at Talavera, but his generalship rose superior to them. In the Crimea the French left us to do most of the fighting in the early stages, and, finally, in the recent war the inaction of the First French Army during the Battle of Arras may have had a big effect upon the issue.

How far does the history of the War of 1914-1918 teach the same lesson—that tactful relations among Allies and the establishment of mutual confidence is of supreme importance in the conduct of successful operations? The earlier volumes had shown how the Passchendaele campaign and its extension into the Winter was due to the desirability of sustaining our Allies; the inception of the Gallipoli campaign had a similar origin; and now this volume shows in no uncertain light that the importance of this aspect of grand strategy has in no whit lost its importance.

It will be remembered that at the outset of the Battle of Amiens (with which this volume principally deals) the First French Army was placed under the command of Sir Douglas Haig in order that all the forces engaged in the battle might be co-ordinated under a single command. But in practice things did not work out well. To begin with, the French commander purposely delayed his attack till after ours had got under way. Thereafter, he hung back behind our line of battle, acting more as a refused flank guard than as a participant in the offensive. To make matters worse, Foch removed this army from Haig's command only seven days after the commencement of the battle. Yet it is difficult to see what the British commander could have done that he omitted to do in the way of tactful liaison with his French colleague. It would seem that sheer national antipathy and suspicion had undue influence—just as it has had in previous wars.

Nor were the relations of the American High Command with their Allies smoother. General Pershing displayed the same national (and perhaps natural) outlook which was exhibited by General MacNaughton in the recent war—if we are to accept the picture portrayed in a recent book, *Missing from the Record*—thereby adding considerably to the difficulties of both Foch and Haig. In fact it would almost seem that when two or more allies are operating together, their commanders should be selected, above all military qualifications, for their tact and unselfish loyalty to the cause. But the practical difficulty is how to recognize these qualities in the individual before he has been put to the test, by which time the damage may have been done. Certainly the choice of General Eisenhower was an admirable one from this aspect, and it is likely that Mr. Churchill, with his intimate inside knowledge of the frictions of the War of 1914-1918, was all the more amenable to the selection of the American General for the Supreme Command. This, in fact, seems to have been a good instance of the value of studying and profiting by the lessons of past history.

This, then, is one of the outstanding lessons to be drawn from a perusal of this volume. The actual conduct of the Battle of Amiens supplies two more. The first is the value of—indeed, the absolute necessity for—meticulous planning of the initial blow, combined with absolute secrecy. The thoroughness of the planning is the more to be admired inasmuch as it was carried out with extreme speed. G.H.Q. issued the

orders to the Fourth Army Commander, "very secret," on 29th July, only ten days before the battle. Yet everything was ready in time "to the last gaiter button." The surprise was complete. The History scarcely does justice to it. The orders prohibiting day road-traffic were the strictest ever, and many batteries were placed in action only a few hours before they were required to open fire. These measures produced a rich dividend.

But a principle even more important than surprise was brought out on the first day of the battle—and here the History is explicit enough—the value of flexibility in plan, and of local initiative and exploitation on the battlefield. The almost complete "walk over" that many infantry units experienced took everyone by surprise, with the result that no adequate attempt was made to exploit the success. For the best part of two hours on the late afternoon of the first day scarcely a shot was fired. It was a typical illustration of that *lassitudo certaminis* that usually sets in on both sides towards the end of a hard day's fighting. That evening no less than six fresh German divisions appeared on the field, and next morning, when the advance was resumed, the opportunity for exploitation was gone.

It is satisfactory to note that Sir Douglas Haig became keenly alive to what Sir James Edmonds calls "treating the enemy with too much respect," and he duly warned the Third Army commander against it. This lesson appears to have been thoroughly imbibed by some at least of our commanders in the recent war. In the dash for Antwerp, for example, one General is reported as exhorting his troops to "forget their flanks." So the lesson taught on 8th August, 1918, may have been applied just twenty-six years later.

This volume fully maintains the qualities that characterized its predecessors, while the veteran mappist, the late Major A. F. Becke, surpassed his previous best.

La Seconde Guerre Mondiale. 18 Jours de Guerre en Belgique. By Lieut.-General Oscar Michiels. (Paris: Berger-Levrault.) 250 francs.

General Michiels, in 300 closely printed pages, has produced an authoritative military account of the Belgian operations in 1940. It is authoritative because he was Chief of the Belgian General Staff (after being professor at the Belgian Staff College and a divisional commander), and he has had at his disposal most of the official records—only the intelligence reports were, intentionally, destroyed. It is military because he writes a plain narrative, with detailed dispositions of troops, copies of orders, etc., and makes professional reflections, without any attempt at picturesque touches to reconstitute the scene. There are twenty-eight very good black and white situation maps in the text.

By 1936 Belgium was free from the obligations of any alliances, and she was intent only on maintaining her neutrality. But King Leopold was suspicious of Germany and, with the agreement of his parliament and people, set about the reorganization of his Army. His aim was a field army of 550,000—eighteen divisions (six active, six reserve and six second reserve), two motorized cavalry divisions, etc. This was more than attained by 1940. Unfortunately, the air weapon was insufficient. Hitler endeavoured to stay this development by a Note of the 13th October, 1937, guaranteeing the inviolability of Belgian territory.

When France and Britain declared war on Germany in September, 1939, Belgium remained neutral, but gradually mobilized, as in 1914, to defend *all* her frontiers. Her plan, if attacked by Germany, was to fall back from one position to another—water lines, so as to have a tank obstacle—until France and Britain could come to her aid.

By the end of April, 1940, it was evident that Germany was massing divisions on the Belgian and Dutch frontiers; but no ultimatum nor declaration of war was received, and Belgium at this stage refused assistance from France and Britain. The situation was so strange that at 9.20 p.m. on the 9th May the Belgian Military Attaché in Berlin was able to telegraph in cipher, and confirm, that the Germans would attack next day. They did so at 4 a.m. There was no strategic or tactical surprise, except that the

Belgians had not expected the use of parachutists and dive-bombers against the front line troops.

The rest is well known. Owing to the failure to destroy two bridges on the right flank, the Belgians had to begin a withdrawal; but a good line, Namur-Brussels-Antwerp, was occupied in co-operation with the French and British, who did not want to go farther. Then the Germans broke through the French Ninth Army (General Corap) near Sedan, and, what is often overlooked, lower down the Meuse between Givet and Namur, on the right of the British and Belgians; whilst, on their left, the Dutch army capitulated and the French Seventh Army (General Giraud) withdrew from the Antwerp area, marching South across the communications of the British-Belgians. With the Germans in Amiens, retirement was unavoidable. Then General Billotte, who was commanding the Group composed of the British, the Belgians and the French First Army, in the North, was seriously hurt in a motor accident and, apparently, four days elapsed before his successor took over. In this interval, "no order to assure the co-ordination of the Armies reached [Belgian] G.H.Q. and each of the Armies operated independently." King Leopold was unwilling to abandon national territory unless forced to do so, and retired slowly. At last, in a narrow corridor and very soon on an "island" between the oncoming enemy and the Channel were not only the Belgian Army of 450,000 men, but 800,000 local inhabitants and a mass of as many refugees. Supply and the evacuation of the wounded were "quasi-insoluble problems." The enemy had complete command of the air and "intensified his attacks hour by hour." The reserves intended to keep connection with the British had to be used to resist the enemy attacks. Finally, on the 26th, came the news that the British had been ordered to re-embark. After warning Lord Gort at 12.30 p.m., King Leopold, at 4.30 p.m. on the 27th May sent a parlementaire to the enemy's lines.

AIR

Wireless Direction Finding. By R. Keen, M.B.E., B.Eng. (Iliffe and Sons, Ltd.) 45s.

This book has been for many years a standard reference book in the Services and can be found on the shelves of most technical libraries. The fourth edition brings the subject up to date and covers the latest developments in this all important field. It contains numerous photographs and diagrams, an excellent index and, having clear chapter, paragraph and page headings, is easy for reference.

In the Services, D/F has many applications, probably the most important of which is in navigation, and the book describes the principles of all the modern methods of Radio Navigation. The author has included certain systems which employ pulse transmission, but explains that he has not covered radar technique since this subject has a considerable specialized literature of its own, and that although many of the navigational services of the future will be carried out by radar there are certain fields in which Continuous Wave D/F will still have commitments for many years to come. This cannot be denied and just as radar is a highly specialized branch of radio, so it must be served by specialized literature. It is to be hoped that this side will eventually be covered as comprehensively as this book covers C.W. D/F.

There are other Service uses for D/F, apart from navigation, and these are fully covered. Aircraft Approach and Blind Landing systems, and the use of D/F for the location of unidentified transmitters are two examples. The former is of vital interest to the future of aviation, and the latter is of high importance in time of war.

This book is recommended mainly to the technical reader. He will find in it the answers to all the questions which he always wishes he could retain in his head. However, the officer who has no knowledge of radio, provided he knows the principles of navigation and some elementary physics can, by selective reading, gain an insight into this important branch of science which plays such a big part in time of war and peace, and so fit himself the better to appreciate how the scientist, in the guise of his brother technical officers, can help him in his problems.

ADDITIONS TO THE LIBRARY

GENERAL

- GATEWAY TO VICTORY.** By James W. Hamilton and William J. Bolce. Crown 4to. 220 pages. (Cumberlege, 1947.) 16s.
The war-time story of the American Army Port of Embarkation at San Francisco.
- CENTRAL PLANNING AND CONTROL IN WAR AND PEACE.** By Sir Oliver Franks. Demy 8vo (paper bound). 59 pages. (Longmans, 1947.) 2s. 6d.
In these three lectures given during early 1947 the Provost of Queen's College, Oxford, drawing on his war-time experiences at the Ministry of Supply, discusses the necessity of central planning and control in the United Kingdom's "foreseeable future."
- THE DISCOVERY OF INDIA.** By Jawaharlal Nehru. Demy 8vo. 498 pages. (Meridian Books, second edition, 1947.) 25s.
The author traces the history of India from Mohenjo-daro, about 2000 B.C., through its many phases up to the international world of to-day, when he gives his interpretation of modern problems as viewed in a full historical focus.
- LAND LAW AND CUSTOM IN THE COLONIES.** By C. K. Meek. Demy 8vo. 337 pages. (Oxford University Press, 1946.) 21s.
Dr. Meek gives a comprehensive description of the systems of agricultural land-holding in the Colonies. The book should appeal to students of sociology, economics and colonial administration.
- FACTORS IN GERMAN HISTORY.** By Geoffrey Barraclough. Demy 8vo. 165 pages. (Blackwell, 1946.) 8s. 6d.
Professor Barraclough sets out to explain Germany's present in the light of Germany's past. His thesis is that German history is the key to the problems of the present time.
- ETHIOPIA: THE STUDY OF A POLITY 1540-1935.** By David Mathew. Demy 8vo. 254 pages. (Eyre & Spottiswoode, 1947.) 15s.
In this historical study, Archbishop Mathew builds up in close detail the Court of Gondar, and traces the impact of European influences on the rulers of Ethiopia.
- RUSSIA AND THE RUSSIANS.** By Edward Crankshaw. Crown 8vo. 256 pages. (Macmillan, 1947.) 9s. 6d.
The author has set out to evoke an image of contemporary Russia arising naturally from the past, and he writes as an artist, not as an historian or a reporter. He contends that if Russian values cannot be understood by us they can at least be recognised and appreciated.
- BRITAIN AND WORLD TRADE. A Report by Political and Economic Planning.** Crown 4to. 199 pages. (P.E.P., 1947.) 18s.
- THE REAL SOVIET RUSSIA.** By D. Dallin. Demy 8vo. 302 pages. (Hollis & Carter, 1947.) 18s.
The author sets down some of the essential facts concerning the character of the Soviet regime, its guiding ideas and its political outlook, all of which form the foundation of Soviet foreign policy.
- PISTOLS: THEIR HISTORY AND DEVELOPMENT.** Compiled by James Frith. Demy 8vo (paper covers). 24 pages. (Lantern Publication, 1946.) 2s. 6d.
This pamphlet contains a chart of Proof and Makers' Marks, notes on types of pistols, their cleaning and repair, and a collector's glossary.
- THE PROBLEM OF REDUCING VULNERABILITY TO ATOMIC BOMBS.** By Ansley J. Coale. Large crown 8vo. 116 pages. (Princeton University Press, 1947.) 10s. 6d.
The author attempts to show that reduction of vulnerability as a means of discouraging attack can be recommended. He does not give final answers but, by analysis and synthesis, he shows the nature of the questions awaiting answer.

THE NEW ITALY: TRANSITION FROM WAR TO PEACE. By Muriel Grindrod. Demy 8vo. 118 pages. (Royal Institute of International Affairs, 1947.) 5s.

A brief study of the politics, administration and government of Italy, the elimination of the fascist structure, and the country's economic position.

BRITISH BATTLES AND MEDALS: CAMPAIGN MEDALS 1588-1946. By Major Lawrence L. Gordon. Medium 8vo. 294 pages. (Gale & Polden, 1947.) 42s. Presented by the Publishers.

CRISIS IN KENYA. By S. & K. Aaronovitch. Demy 8vo. 211 pages. (Lawrence & Wishart, 1947.) 10s. 6d.

The authors put forth a plan for economic and political advance in Kenya.

THE NEW CZECHOSLOVAKIA AND HER HISTORICAL BACKGROUND. By Gustav Beuer. Demy 8vo. 275 pages. (Lawrence & Wishart, 1947.) 12s. 6d.

This book deals with the age-old struggle against German domination, and the democracy of the New Czechoslovakia.

LENIN AND THE RUSSIAN REVOLUTION. By Christopher Hill. Foolsap 8vo. 245 pages. (Hodder & Stoughton, 1947.) 5s.

THE REPORT OF THE ROYAL COMMISSION TO INVESTIGATE THE FACTS RELATING TO AND THE CIRCUMSTANCES SURROUNDING THE COMMUNICATION, BY PUBLIC OFFICIALS AND OTHER PERSONS IN POSITIONS OF TRUST, OF SECRET AND CONFIDENTIAL INFORMATION TO AGENTS OF A FOREIGN POWER. (Familiar title—"The Canadian Spy Trials.") Official. Royal 8vo. 733 pages. (Canadian Government, 1946.) 7s.

THE RED SPIDER WEB: THE STORY OF RUSSIAN SPYING IN CANADA. By B. Newman. Demy 8vo. 254 pages. (Latimer House, 1947.) 15s.

The writer discusses the contents of the Report of the Canadian Government's Royal Commission on the "Spy Trials" of 1946. He concludes with a chapter of general reflections on the international questions which the particular instances emphasize.

BRITAIN AND CEYLON. By Lennox A. Mills. Crown 8vo. 70 pages. (Longmans Green, 1945.) 1s.

A small handbook on the development of Ceylon.

SOUTH AFRICA: A PLANNED TOUR OF THE COUNTRY TODAY. By A. W. Wells. Crown 8vo. 434 pages. (Dent, 1947.) 16s.

An up-to-date guide containing chapters on history, topography and economics.

THE MAKING OF THE UNION OF SOUTH AFRICA: A BRIEF HISTORY FROM 1487 TO 1939. By M. S. Geen. Demy 8vo. 227 pages. (Longmans Green, 1946.) 11s. 6d.

BOTHA, SMUTS AND SOUTH AFRICA. By A. F. B. Williams. Foolsap 8vo. 216 pages. (Hodder & Stoughton, 1946.) 5s.

A study of South African life through the lives of these great figures from 1860 to the present day.

BRITAIN AND SOUTH AFRICA. By Eric A. Walker. Crown 8vo. 64 pages. (Longmans Green, 1941.) 9d.

A Longmans pamphlet in the British Commonwealth Series.

THE WORK OF PSYCHOLOGISTS AND PSYCHIATRISTS IN THE SERVICES. By an officially appointed Committee. Medium 8vo. 94 pages. (His Majesty's Stationery Office, 1947.) 2s.

INTER-ALLIED CONFERENCES ON WAR MEDICINE, 1942-1945. Edited by Major-General Sir Henry L. Tidy. Demy 8vo. 531 pages. (Staples Press, 1947.) 50s.

This is a report on the conferences convened by the Royal Society of Medicine.

THE OTHER BATTLE: BEING A HISTORY OF THE BIRMINGHAM SMALL ARMS COY. WITH SPECIAL REFERENCE TO WAR ACHIEVEMENTS. By Donovan M. Ward. Royal 8vo. 180 pages. (Privately, 1946.) Not priced. Presented by the Company.

AMONG THOSE PRESENT: THE OFFICIAL STORY OF THE PACIFIC ISLANDS AT WAR. Demy 8vo (paper). 96 pages. (His Majesty's Stationery Office, 1946.) 1s. 3d.

BLUE PENCIL ADMIRAL: THE INSIDE STORY OF THE PRESS CENSORSHIP. By Rear-Admiral G. P. Thomson. Demy 8vo. 216 pages. (Sampson Low, 1947.) 15s.

MARCHING WITH THE TIMES, 1931-1946. By Douglas Goldring. Demy 8vo. 356 pages. (Nicholson & Watson, 1947.) 10s. 6d.

The author provides a commentary on the political events of the fifteen years covered which is outspoken and intentionally controversial.

THE GREAT GLOBE ITSELF: A PREFACE TO WORLD AFFAIRS. By William C. Bullitt. Crown 8vo. 268 pages. (Macmillan, 1947.) 8s. 6d.

The author was United States Ambassador to Russia from 1933 to 1936, and to France from 1936 to 1940. The book deals mainly with Soviet foreign policy and, to a less degree, with Soviet strategy.

THE PILGRIMAGE OF ARNOLD VON HARFF, KNIGHT, FROM COLOGNE, THROUGH ITALY, SYRIA, EGYPT, NUBIA, PALESTINE, TURKEY, FRANCE AND SPAIN, WHICH HE ACCOMPLISHED IN THE YEARS 1496 TO 1499. Edited by the Hakluyt Society. Demy 8vo. 325 pages. (Privately, 1946.) Subscription.

ITALY. By Elizabeth Wiskemann. Crown 8vo. 160 pages. (Oxford University Press, 1947.) 5s.

The writer, after long residence among the Italians, approaches their past and present, their problems and achievements, as a sympathetic observer, but succeeds in distinguishing reality from show.

MINORITIES IN THE ARAB WORLD. By A. H. Hourani. Large post 8vo. 125 pages. (Oxford University Press, 1947.) 10s. 6d.

This is a study of minorities and minority-problems in Egypt, Palestine, Trans-jordan, Lebanon, Syria and Iraq. After an historical survey the author discusses the increase of minority nationalism during the recent war, and outlines the essential safeguards for the minorities of the Arab world and the machinery which must be established for their fulfilment.

SOVIET JEWRY, PALESTINE AND THE WEST. By Walter Zander. Crown 8vo. 109 pages. (Gollancz, 1947.) 6s.

The author suggests that as the Jewish situation in the World has undergone fundamental changes, Jewry will have to rediscover its spiritual foundations by transforming the present persecutions into a creative experience.

FREDERICK THE GREAT: THE RULER, THE WRITER, THE MAN. By G. P. Gooch. Demy 8vo. 363 pages. (Longmans Green, 1947.) 21s.

The writer describes the wars and diplomacy by which Frederick hoisted his small kingdom into the ranks of the Great Powers, and illustrates the development of his character and ideology from his letters and table-talk. Frederick's relations with his three chief correspondents, Voltaire, his sister Wilhelmina and Prince Henry, the ablest of his brothers.

THE RISE AND FALL OF JAPAN. By Sir Frederick Whyte. Crown 8vo. 59 pages. (Royal Institute of International Affairs, 1945.) 1s.

This is an attempt to forecast the reactions of the Japanese nation to defeat and unconditional surrender. The book is an outcome of the discussions of a small group, all the members of which have either worked in the Japanese Empire or have made a special study of Japanese problems.

SOUTH-WEST AFRICA: THE FACTUAL BACKGROUND. By Sir Charles Dundas. Large post 8vo (paper). 52 pages. (South African Institute of International Affairs, 1946.) 3s. 6d.

This compact survey covers the history, constitution, politics and economics of the former German colony.

THE CASE OF RUDOLPH HESS: A PROBLEM IN DIAGNOSIS AND FORENSIC PSYCHIATRY. Edited by J. R. Rees. Demy 8vo. 224 pages. (Heinemann, 1947.) 12s. 6d.

GOEBBELS—THE MAN NEXT TO HITLER: THE SECRET DIARY OF DR. RUDOLPH SEMMLER. By Dr. Rudolph Semmler. Crown 8vo. 234 pages. (Westhouse, 1947.) 9s. 6d.

The diary opens on 31st December, 1940, and closes on 17th April, 1945, after which date the fate of the author is unknown. It exposes Germany's approach to Russia in April, 1944, for the formation of an alliance against Britain and America. New details are revealed of the happenings in Berlin on 20th July, 1944, when the Generals attempted to seize power. It records the rivalry of Goebbels and Goering, Hitler's behaviour on first hearing of the Invasion, the story of the V-weapons, and Goebbel's last-minute efforts to mobilize the German people and to turn Europe against Russia.

REPORT ON EXPERIENCE—A Personal Narrative of a New Zealand Officer who served with the Oxfordshire and Buckinghamshire Light Infantry in North Africa and then parachuted into Greece. By John Mulgan. Medium 8vo. 150 pages. (Oxford University Press, 1947.) 7s. 6d.

FEDERAL GOVERNMENT. By K. C. Wheare. Demy 8vo. 278 pages. (Oxford University Press—for the Royal Institute of International Affairs—1947.) 15s.

The nature of federal government in general and how federal systems have worked when confronted by certain specific problems.

FIRE OUT OF HEAVEN. By Sarah Gertrude Millin. Demy 8vo. 316 pages. (Faber & Faber, 1947.) 16s.

The 5th volume of a diary of the 1939-1945 War—covering the period 1st September, 1943, to 1st September, 1944.

IT SPEAKS FOR ITSELF: WHAT BRITISH WAR LEADERS SAID ABOUT THE POLISH ARMED FORCES, 1939-1946. Selected by Captain W. Leitgeber. Demy 8vo. 163 pages. (Privately, 1946.) Presented by the Polish Forces Press Bureau.

THE UNITED STATES IN WORLD AFFAIRS, 1945-1947. By John C. Campbell. Demy 8vo. 585 pages. (Harper, New York, 1947.) 25s.

THE HORSE RAMPANT. By Captain James J. Pearce. Crown 4to. 145 pages. (Hale, 1947.) 21s. Presented by the Author.

How to learn to train and ride—a new and simple method for the education and training of Horses and Riders.

INSIDE U.S.A. By John Gunther. Demy 8vo. 979 pages. (Hamish Hamilton, 1947.) 21s.

WEAPONS OF WORLD WAR II. By Major-General G. M. Barnes. Demy 4to. 317 pages. (D. Van Nostrand, New York, 1947.) 42s.

THE QUILL: A COLLECTION OF PROSE, VERSE AND SKETCHES BY OFFICERS PRISONER-OF-WAR IN GERMANY, 1940-1945. Edited by E. G. C. Beckwith. Demy 4to. 264 pages. (Country Life, 1947.) 42s. Presented by the Editor. See Reviews.

INTO BATTLE: SPEECHES BY THE RIGHT HONOURABLE WINSTON S. CHURCHILL, C.H., M.P. Demy 8vo. 313 pages. (Cassell, 1947.) 12s. 6d.

ONWARDS TO VICTORY: WAR SPEECHES BY THE RIGHT HONOURABLE WINSTON S. CHURCHILL, C.H., M.P. Demy 8vo. 278 pages. (Cassell.) 12s. 6d.

FROM ADMIRAL TO CABIN BOY. By Admiral Sir Barry Domville. Crown 8vo. 163 pages. (Boswell Publishing Company, 1947.) 12s. 6d.

A HISTORY OF RUSSIA. By Sir Bernard Pares. Demy 8vo. 640 pages. (Jonathan Cape, 1947.) 30s.

THE INTELLIGENT MAN'S GUIDE TO THE POST-WAR WORLD. By G. D. H. Cole. (Victor Gollancz, 1947.) 21s. Demy 8vo. 1,143 pages.

CHRONOLOGY OF THE SECOND WORLD WAR. By The Royal Institute of International Affairs. Medium 8vo. 374 pages. 15s.

THE STEEP PLACES: AN EXAMINATION OF POLITICAL TENDENCIES. By Norman Angell. Demy 8vo. 207 pages. (Hamish Hamilton, 1947.) 8s. 6d.

THE BATTLE OF BRUNANBURGH AND ITS PERIOD. By John Henry Cockburn. Medium 8vo. 300 pages. (*Sheffield Telegraph*, 1931.) Not priced. Presented by Lieutenant Colonel L. V. S. Blacker.

AN ATLAS-HISTORY OF THE SECOND GREAT WAR: VOLUME IX—SEPTEMBER, 1943, TO APRIL, 1944. VOLUME X—MAY, 1944, TO AUGUST, 1945. By J. F. Horrabin. Crown 8vo. (Nelson, 1944.) 5s.

BOMBING AND STRATEGY: THE FALLACY OF TOTAL WAR. Demy 8vo. 90 pages. By Admiral Sir Gerald Dickens. (Sampson Low, Marston, 1947.) 7s. 6d. Presented by the Publishers. See Review in this Journal.

NAVAL

SHIPS OF THE ROYAL NAVY. By Francis E. McMurtrie. Crown 8vo. 288 pages. (Sampson Low, 1947.) 10s. 6d.

The present edition of this work, compiled by the editor of *Jane's Fighting Ships*, contains, with other new material, details of H.M.S. Vanguard.

SHIPS: A STUDY IN MODERN SHIPBUILDING. By J. S. Redshaw. Crown 4to. 80 pages. (Muller, for Vickers Armstrong, 1947.) 10s. 6d.

The Chief Naval Architect for Vickers Armstrong gives an account for the layman of the science of shipbuilding and the organization which precedes the launching of a ship. There are 73 illustrations, some in colour.

SEA HAZARD (1939-1945). Compiled by Messrs. Houlder Bros. Medium 8vo. 105 pages. (Houlder Bros., 1946.) Not priced.

A record of the engagements between enemy submarines, aircraft, etc., and the ships under the management of Messrs. Houlder Bros. Presented by The Naval War Trophies Committee.

FROM SAIL TO STEAM. By H. Moyse-Bartlett. Demy 8vo. 20 pages. (Historical Association, 1946.) 1s.

A brief introduction to the study of the later history and passing of the sailing ship, and of the early development of the steamer.

FUEHRER CONFERENCES ON NAVAL AFFAIRS, 1939. Edited by the Admiralty. Medium 4to. 69 pages. (Admiralty, 1947.) Not priced. Presented by the Admiralty.

FUEHRER CONFERENCES ON NAVAL AFFAIRS, 1940. Edited by the Admiralty. Medium 4to. 144 pages. (Admiralty, 1947.) Not priced. Presented by the Admiralty.

FUEHRER CONFERENCES ON NAVAL AFFAIRS, 1944. Edited by the Admiralty. Medium 4to. 74 pages. (Admiralty, 1947.) Not priced. Presented by the Admiralty.

FUEHRER CONFERENCES ON NAVAL AFFAIRS, 1945. Edited by the Admiralty. Medium 4to. 126 pages. (Admiralty, 1947.) Not priced. Presented by the Admiralty.

FROM SHIP TO SHORE: THE BIOGRAPHY OF WILLIAM SCHERMULY AND THE HISTORY OF THE SCHERMULY PISTOL ROCKET APPARATUS LTD. Compiled by C. R. Thompson. Demy 4to. 79 pages. (Privately, 1946.) Not priced. Presented by the Company.

BRITAIN AT WAR SERIES: VOLUME V—THE ROYAL NAVY AND ALLIES, OCTOBER, 1944—SEPTEMBER, 1945. By Kenneth Edwards. Crown 4to. 280 pages. (Hutchinson, 1947.) 21s.

"P.Q.17"—A STORY OF A SHIP. By Godfrey Winn. Demy 8vo. 219 pages. (Hutchinson 1947.) 12s. 6d.

The record of an escort to a convoy to Russia.

IT MIGHT HAPPEN AGAIN: VOLUME II. THE NAVY AND DEFENCE. By Admiral of the Fleet Lord Chatfield. Demy 8vo. 222 pages. (Heinemann, 1947.) 18s. See Review in this Journal.

JANE'S FIGHTING SHIPS 1946-47. F. T. Jane. Edited by F. E. McMurtrie. Foolscape folio. 471 pages. (Sampson Low, Marston, 1947.) 63s. Presented by the publishers. See Review in this Journal.

NO STARS TO GUIDE. By Adrian Seligman. Demy 8vo. 332 pages. (Hodder & Stoughton, 1947.) 21s.

In the desperate autumn of 1941 a small naval party was sent to the Dardanelles to pilot five Russian ships that were attempting to escape through the enemy blockade of the Aegean to Syria. Names have been altered and in certain cases the sequence of events has been changed.

DUST UPON THE SEA. By W. E. Benyon-Tinker. Demy 8vo. 215 pages. (Hodder & Stoughton, 1947.) 15s.

Exploits of the Levant Schooner Flotilla among the Greek Islands in the Aegean between midsummer, 1943, and January, 1945. These schooners were converted Greek caiques.

CHARTING THE SEAS IN PEACE AND WAR. By The Admiralty. Royal 8vo. 24 pages. (H.M.S.O., 1947.) 9d.

NELSON. By Carola Oman. Demy 8vo. 720 pages. (Hodder & Stoughton.) 42s.

This colossal new work by Carola Oman (Lady Lenanton) includes new material from a large number of letters not previously used and her work may be regarded as the standard biography to date.

BLUE TALLY HO! By Vice-Admiral C. V. Usborne, C.B., C.M.G. Crown 8vo. 175 pages. (Rich & Cowan, 1947.) 9s. 6d. Presented by the author.

Although this is written in novel form as a naval "yarn," it is in effect a readable and instructive account of how the Battle of the Atlantic was won. As such it can be highly commended to those who want to combine information and entertainment. For either or both it is good value.

MILITARY

THE MAN IN THE HELMET. By James Wellard. Demy 8vo. 244 pages. (Eyre & Spottiswoode, 1947.) 10s. 6d.

This is a life of General George S. Patton, Commander of the Third United States Army.

1ST NORTHAMPTONSHIRE YEOMANRY IN NORTH-WEST EUROPE. By R. F. Neville. Foolscape 4to. 104 pages. (Privately printed.) Not priced. Presented by the Regiment.

THE HISTORY OF THE FIRST SEVEN BATTALIONS THE ROYAL IRISH RIFLES: VOLUME II. By Cyril Falls. Demy 4to. 188 pages. (Gale & Polden, 1925.) Not priced. Presented by the History Committee through Colonel G. H. P. Whitfeld.

THE LIVERPOOL SCOTTISH 1900-1919. By A. M. McGilchrist. Demy 8vo. 333 pages. (Henry Young & Sons, 1930.) Not priced. Presented by General Sir George Weir.

HISTORY OF THE 3RD BN., 7TH RAJPUT REGIMENT (DUKE OF CONNAUGHT'S OWN). By H. G. Rawlinson. Crown 4to. 223 pages. (Oxford University Press, 1941.) Not priced. Presented by Captain C. T. Atkinson.

THE ARMY OF RANJIT SINGH: PART I—INFANTRY, PART II—ARTILLERY, PART III—CAVALRY. By Sita Ram Kohli. Medium 8vo. 87 pages. (Reprinted from the "Journal of Indian History," 1922-1923.) Not priced. Presented by Lieut.-Colonel L. V. S. Blacker.

THE ROYAL MANX FENCIBLES. By B. E. Sargeaunt. Demy 8vo. 101 pages. (Gale & Polden, 1947.) 10s. Presented by the Publishers.

MISSING FROM THE RECORD. By Colonel Dick Malone. Demy 8vo. 227 pages. (Collins, Toronto, 1946.) \$3.

The inside story of the clashing personalities of the great Canadian and other Allied military leaders as told by the Chief of Canadian Army Public Relations.

THE GURKHA SOLDIER. By Major H. R. K. Gibbs. Crown 8vo. 63 pages. (Thacker Spink, Calcutta, 2nd edition, 1947.) Rs. 3-8. Presented by the Publishers.

HISTORY OF THE 2ND/5TH BATTALION THE QUEEN'S ROYAL REGIMENT, 1939-1945. By Captain P. N. Tregoning. Crown 8vo. 104 pages. (Gale & Polden, 1947.) Not priced. Presented by the Publishers.

IRREGULAR ADVENTURE. By Christie Lawrence. Large post 8vo. 276 pages. (Faber & Faber, 1947.) 10s. 6d.

A record of a year's journey which began in June, 1941, and took the writer through Yugo-Slavia, Greece and Bulgaria. The mystery of Drazha Mihailovitch is again discussed.

HISTORY OF THE GREAT WAR: MILITARY OPERATIONS, FRANCE AND BELGIUM, 1918. Volume IV, FRANCO-BRITISH OFFENSIVE, 8th AUGUST-26th SEPTEMBER. Edited by Brigadier-General Sir James Edmonds. Demy 8vo. 621 pages. (His Majesty's Stationery Office, 1947.) 27s. 6d. See Review in this Journal.

CENTRAL MEDITERRANEAN FORCES: A BRIEF RECORD OF UNITS OF THE ROYAL ARMY SERVICE CORPS AND ITS ALLIED AND SISTER CORPS. Compiled. Foolsap folio. (Privately, 1946.) Not priced.

THE ROAD TO TRIESTE. By Geoffrey Cox. Demy 8vo. 249 pages. (Heinemann, 1947.) 12s. 6d.

A detailed story of the days of May, 1945, in which the Eighth Army, headed by the 2nd New Zealand Division, thrust into Trieste from the West where it encountered the Yugoslav Fourth Army from the East. Full account is given of the early tensions inside the city between the Yugoslav and British forces, and tells of men and leaders of Tito's Partisan Army, of the surrender of Mihailovitch's main Chetnik Force, and of the Italian partisan rising in north-eastern Italy.

THE 48th AND 61st DIVISIONAL SIGNALS, T.A., 1939-1945. By Brigadier E. A. James. Royal 8vo. 101 pages. (Privately, 1947.) 21s. Presented by the Author.

ASSAULT DIVISION: A HISTORY OF THE 3rd DIVISION FROM THE INVASION OF NORMANDY TO THE SURRENDER OF GERMANY. By Norman Scarfe. Demy 8vo. 288 pages. Collins, 1947.) 12s. 6d. Presented by the Publishers.

PRELUDE TO GLORY: THE STORY OF THE CREATION OF BRITAIN'S PARACHUTE ARMY. By Group Captain Maurice Newnham. Demy 8vo. 350 pages. (Sampson Low, Marston, 1947.) 21s.

GRANDFATHER LONGLEGS. By Ian Morrison. Demy 8vo. 239 pages. (Faber & Faber, 1947.) 12s. 6d.

The life and gallant death of Major H. P. Seagrim, G.C., D.S.O., M.B.E., and an account of the Karen people in Burma during the war 1939-1945.

HISTORY OF THE 1ST BATTALION, 14th PUNJAB REGIMENT: SHERDIL-KI-PALTAN (late XIX PUNJABIS). Compiled by G. Pigot. Medium 4to. 243 pages. (Privately, 1946.) Not priced. Presented by Lieut.-Colonel R. F. L. Thomas, Officer Commanding.

AIR

AIRCRAFT OF THE FIGHTING POWERS, 1939-1945. Vols. 1, 3, 4, 5, 6, 7. Edited by D. A. Russell. Demy 4to. (Harborough Publishing Co., 1940-1946.) £9 9s. od.

THE ROYAL AIR FORCE. By Eric Sargent. Foolsap 8vo. 810 pages. (Sampson Low, 1942.) 12s. 6d.

A useful book of reference for the lesser-known details of the Royal Air Force.

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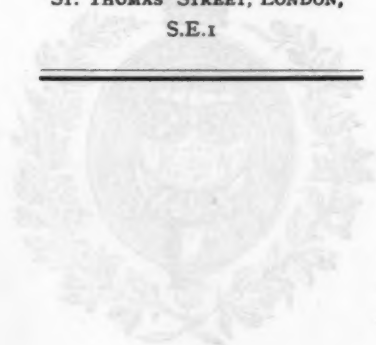
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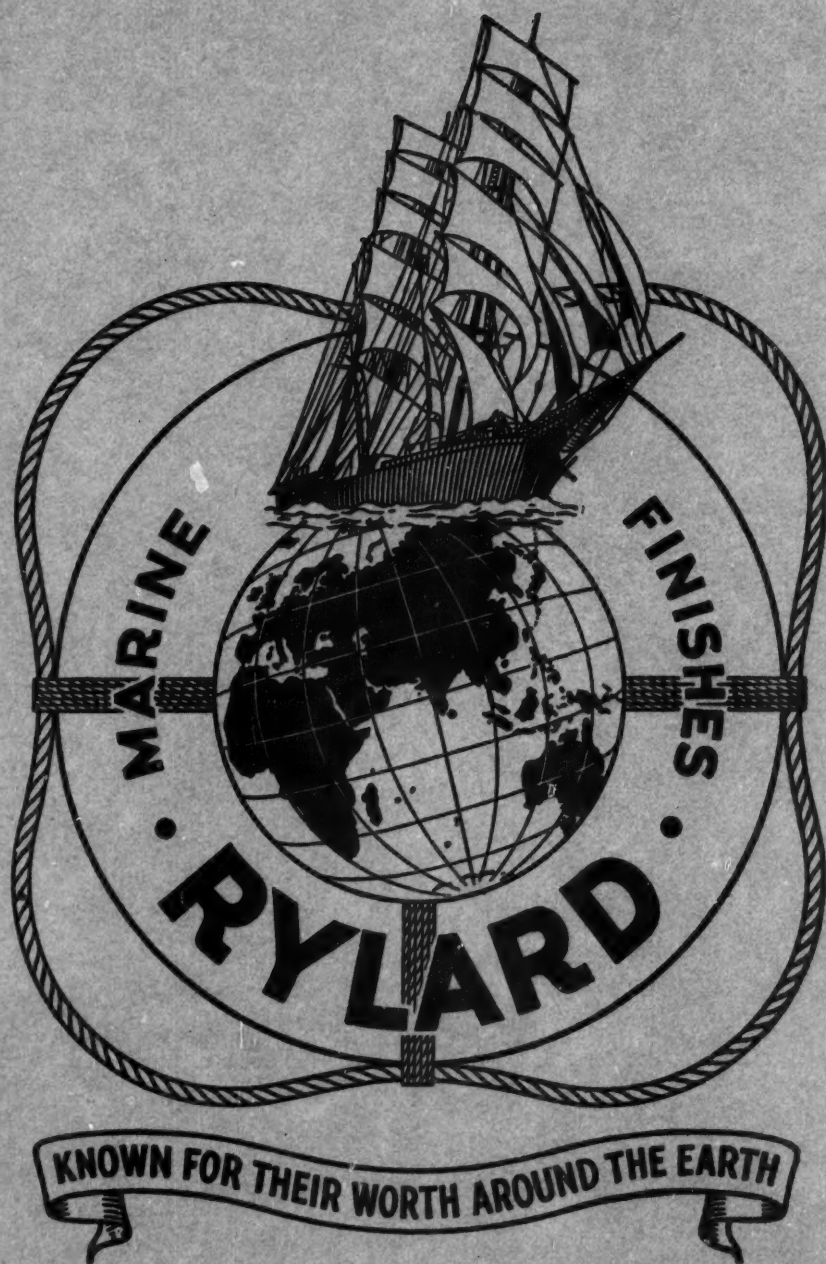
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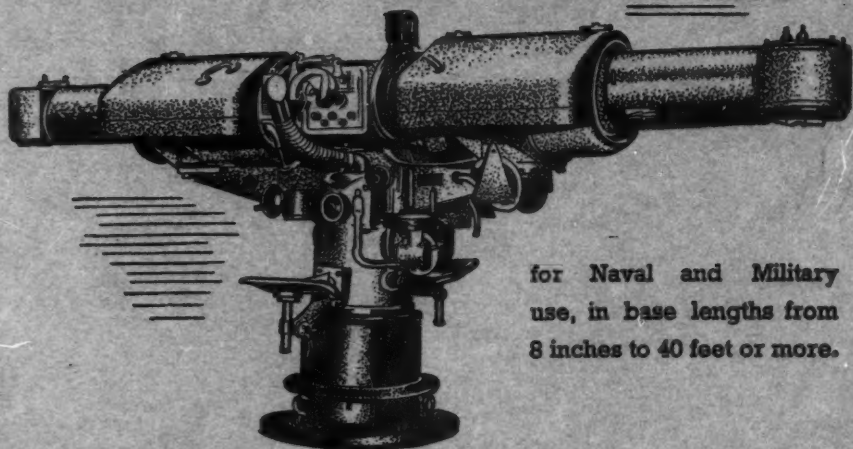
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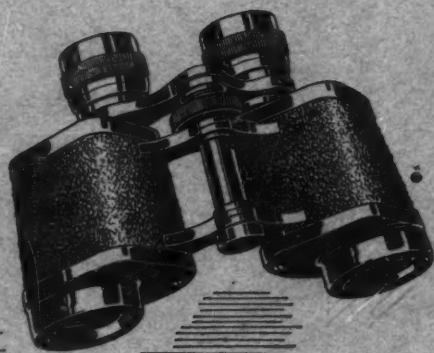
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